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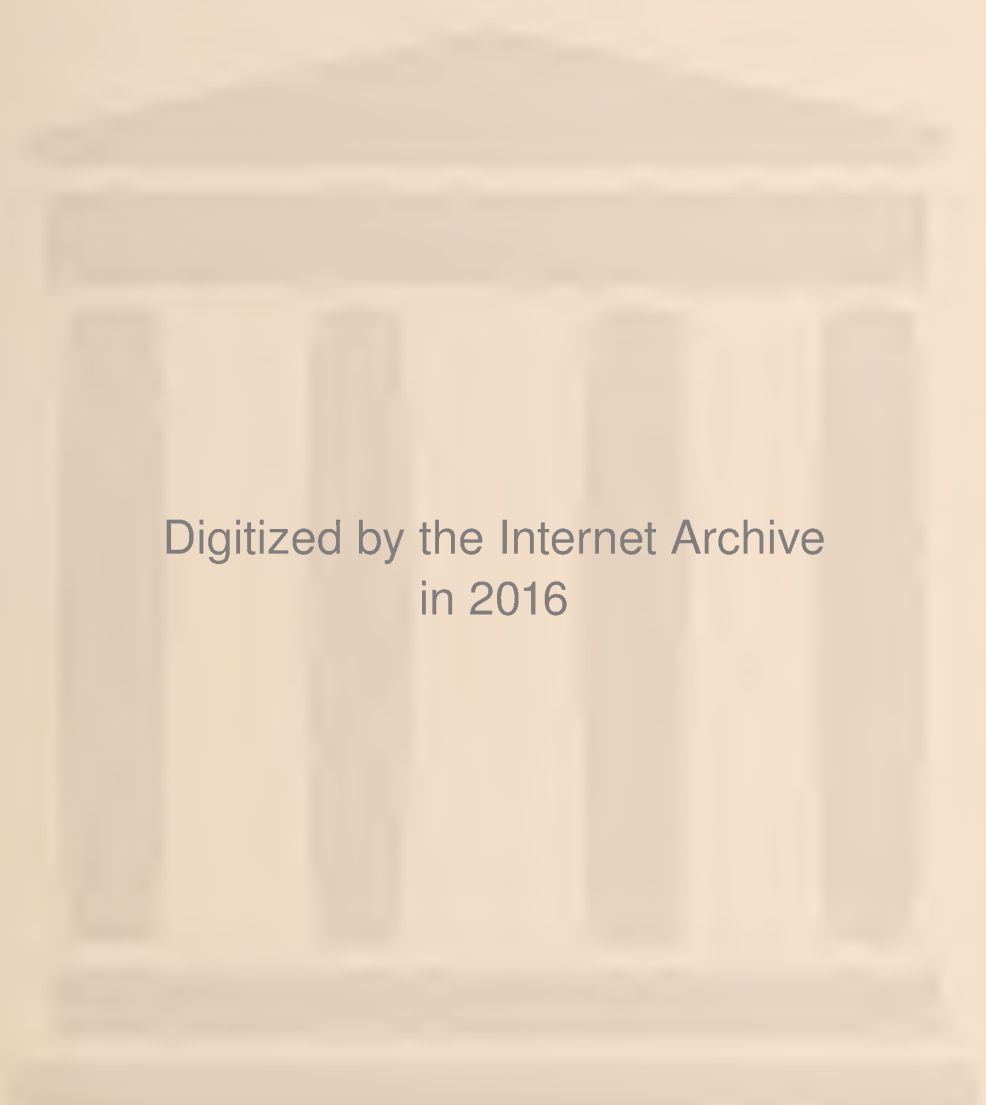


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THE SANATORIUM TREATMENT OF PULMONARY TUBERCULOSIS*

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Corresponding Member of the International Antituberculosis Association

ST. PAUL

The sanatorium treatment of pulmonary tuberculosis has, during the last fifty years, gained in favor until at the present time, on account of its achievements, it is far ahead of all other methods in the estimation of the profession. The reasons for this are readily understood, and it is the logical conclusion when the premises of the question to be solved are taken into consideration. We have, in the first place, a disease of slow, insidious approach and advance, if the acute military form is excluded as a hopeless condition from the start. Since it is quite generally recognized as a disease of civilization, due in many instances to house-infection and always assisted in its progress by the enervating surroundings of a too complex social system with its tendency to consider the luxury of to-day the necessity of to-morrow, one great element in its successful treatment is to induce the patient to adopt the simple life, to give up the cares of business, to abandon the office or workshop or the care of a household, to leave the farm with its drudgery and unhygienic method of life, and, under the régime of the sanatorium, to learn how to live and what to do in order to regain health.

Another premise is that tuberculosis is not a disease that yields to drugs. During the centuries that have passed almost every article in the pharmacopeia, and many that are without its pale, have at different times been praised as curative in their effects upon this disease, only again to be discarded as experience has shown how fallacious were the claims made for them. The profession to-day, when called to care for a patient suffering with pulmonary tuberculosis, is still largely given to handing out a prescription,

which usually calls for some derivative of creosote, probably because it is the fashion to do so, surely not because the results are gratifying; but this is not the question under consideration. Given therefore a disease of civilization, not amenable to drugs, it is logical to remove the patient from the surroundings that have occasioned the disease and put him under those influences that have been known through all the centuries to have a beneficial effect upon his infirmity. Even Hippocrates observed the good results that pure air exerts upon consumption, and from his time to the present a great deal of like testimony can be found. But the profession illogically continued to give medicine. Its position is well illustrated by that of Prof. Rush, who relates, with evident surprise, that consumptives who had adopted the mode of life of the Indians had been known to recover.

It was not until about 1830 that an English physician, named Bodington, undertook to use fresh air systematically in the treatment of tuberculosis. He did not succeed in making any disciples. Twenty-five years later Dr. Brehmer opened, at Gorborsdorf in Germany, the first sanatorium, having convinced himself theoretically that pulmonary tuberculosis could be cured by a hygienic method of outdoor life. He lived to see this institution a recognized success and his doctrines generally accepted. He is usually regarded as the originator of the present sanatorium methods.

The first principle of the sanatorium treatment of tuberculosis is life in the open air of as continuous a nature as possible. This life of the patient must be hemmed in by strict rules of conduct, which must be enforced by continuous and intelligent oversight. A generous diet is a neces-

*Read before the Minnesota State Medical Association, August 13 and 14, 1907.

sity. Such medication as is indicated by any complications must be administered. In addition to this, those cases that are suited for it should be treated with tuberculin, the only treatment known to-day that affords the patient any probability of relief. Life at a sanatorium for incipient cases of tuberculosis—advanced cases have no place in sanatoria; they belong in special hospitals—should be one shorn of most of the luxuries and reduced to as simple a plan as possible. Shacks or well-ventilated tents are the ideal sleeping-quarters. Where these cannot be had the rooms of the patients must be as thoroughly ventilated as windows and doors will allow. When the nurse makes her first rounds in the morning she takes the pulse and temperature and either allows the patient to get up or orders the bed for the day, this being largely determined by the pulse and temperature record and the history of the days immediately preceding. A cold sponge- or shower-bath should be the first act in the morning and be followed by a brisk rub with a rough towel. As a general tonic and special measure for the control of night-sweats this use of cold water is unexcelled.

After breakfast the patients receive whatever special treatment may be required for their upper air-passages, their injections of tuberculin, and so forth. Then a certain amount of exercise should be taken, except in fever cases or those with a rapid pulse. The rule governing the amount of exercise is that no fatigue must be experienced, nor any shortness of breath or accelerated heart-action induced. If the patient notices any of these symptoms he must immediately desist from further exertion, and if out walking, for instance, sit down until completely rested. Walking is one of the best exercises. Rowing may be allowed to patients who have no fever and a slow pulse, if indulged in moderation. Horseback riding and driving are apt to be too violent or to tempt patients to excesses. Dusty roads, too, are very bad for irritable lungs, and a cloud of dust must be encountered with every passing vehicle, even if the wind does not carry the dust of the vehicle along with it and keep its occupants in an atmosphere loaded with it. The care of a garden of vegetables or flowers is an excellent thing for any one who is interested in such work.

A generous diet is required, with variety sufficient to tempt the appetite. If the appetite is capricious, lunches should be served between meals, but if the patient is able to partake of three good meals daily, digestion and assimilation go on better than if two or three lunches are forced down between meals and the digestive organs given no rest the entire day.

An hour's rest in bed after dinner, which should be served in the middle of the day, is an

assistance to the digestion of the meal, as well as a rest for the body and mind when it is most needed. It comes half way between the hours for arising and retiring and guards the patient against experiencing any fatigue. The golden rule for the patient is, "Never get tired." This hour's rest makes it possible for many of the weaker ones to be up and about without breaking the rule. This rest should be taken whether the patient sleeps or not, and no reading or talking should be indulged in.

If the patient has fever or rapid pulse the bed is the best medicine for the condition. The temperature-chart is to the physician who is conducting a case of pulmonary tuberculosis as important and significant as the chart of the ocean to the mariner. If carefully recorded several times a day the temperature gives notice of the extension of the disease or of its quiescence. It records danger signals before auscultation can discover the changes that are going on, and is a safe index of the gravity of any extension of the disease process or of any complication. To a lesser degree rapidity of the heart's action also gives valuable hints. The pulse-rate should be compared to the record of previous days, and if it begins to run up some extension of the disease or some complication must be sought.

The night-sweats are sometimes apparently due to the fall of the temperature, and at other times they are observed in afebrile patients. This latter variety is probably an effort on nature's part to reduce the degree of toxemia. Night-sweats, as a rule, disappear soon after a patient has begun the sanatorium treatment. If they do not, alcohol or vinegar baths are usually efficacious.

Strict discipline must be maintained in a sanatorium. The hours for arising and retiring, for meals and luncheons, for exercise and rest, should be systematically arranged and their observance required. Exercise must be graded, and any tendency to overdo kept down. When the patient has reached the stage of improvement in which exercise is indicated it must be taken as ordered. After resting for weeks it often requires considerable urging to induce a patient to begin to exercise again and to overcome the habit of laziness, so necessary during the febrile period.

Patients should be told that a course of treatment in a sanatorium extends over several months, and that they do not do justice to the treatment if they intend to give it a trial for two or three weeks. Recovery from a disease as serious as pulmonary tuberculosis is not often secured without the aid of the patient, and one of the necessary aids is that he be willing to give as much time as may be necessary, whether it be six months or a year or several of them. The chief requisite is that the patient must be willing

to sacrifice present comforts for future rewards, as the road to recovery is not often a smooth one, and patients must be prepared to go through the cure with a cheerful endurance and determination to succeed.

Patients with such a disposition do so much better than those who become despondent and homesick and complaining, it is a good rule to send the homesick ones away, as they are but taking the place of patients who might recover. While their unfortunate disposition makes an unfavorable prognosis almost certain.

The collection of the sputum of every patient, and its destruction by fire must be carried out with scrupulous care and exactness. Everything about a sanatorium intended for the care of patients afflicted with a communicable disease, even if mildly contagious, as is tuberculosis, should be conducted with the view of minimizing the danger. This must be done to prevent the possibility of reinfection of the patients and for the protection of those engaged in the work of the institution. The truth of the matter is that a well-conducted institution for the care of consumption is practically free from the danger of transmission of the disease, as is shown by the records of Brompton Hospital for Consumption. This institution has never been able to trace a case of infection among its numerous physicians, nurses, or ward-maids, although its doors were open twenty-five years or more before the discovery of the bacillus of tuberculosis. The modern institutions for the care of tuberculosis, whose name is legion, have fortunately been able to practically duplicate this record, but it can be done only by the most painstaking neatness and cleanliness in every department. One very important function of the sanatorium is to teach its inmates how to be safe members of society when they return to their homes, and if discipline is lax the institution is a failure in this most important particular.

The results that may be expected from the sanatorium treatment is an important subject, and one that is not generally fully understood.

Pulmonary tuberculosis, if the acute miliary form be excluded, is an essentially chronic disease. The mission of the sanatorium is to teach the sufferer how he should live in order to regain his health or, if that is impossible, to prolong his life. If incipient cases only are taken into consideration about eighty per cent of them should be in a condition of apparent arrest of the disease after from three to six months' treatment. Not more than half as many of the cases that are moderately advanced are discharged as apparently cured, and very few of the far advanced cases ever get beyond the improved or much improved classification. Whether this initial gain is to become permanent or whether the patient is to suffer a relapse, will depend largely

on how well he has learned the lesson of how to live, of what to do and what not to do, which the sanatorium course should have taught him. But, like all other schools, the sanatorium cannot supply its graduates with brains; and the want of a correct appreciation of what they should have learned thoroughly, or the want of sufficient money with which to continue the practice of the rest, fresh air, and good-food teachings, causes the greatest number of relapses that come to those discharged as apparently cured. These relapses should not be charged to the account of the sanatorium and the whole sanatorium movement discredited in consequence. There is no other method that can show primarily as much improvement as this can, and if this improvement cannot be made permanent it is usually due to defects in the patient's constitution or appreciation of the necessity of constant vigilance, or to a scarcity of means, and not to a defect in the treatment.

DISCUSSION

DR. MARY E. TOWERS (Minneapolis): I enjoyed Dr. Taylor's paper very much because I hear so much of Dr. Taylor's treatment, but I cannot endorse all that he has said regarding his treatment. As doctors' treatment of tuberculosis is so different, the laity does not know what to believe. Some say very cold air will cure; others say extreme heat will cure, such as we find in Texas; some say light will cure, and now comes a doctor from over the water who says darkness will cure it.

I have had a little experience with the treatment of tuberculosis because I spent a winter in Texas, right in the field where they have a great deal of it. They have the sanitarium treatment also. In Silver City there is a national sanitarium for tuberculosis, and they scarcely use any tuberculin. I do not think the injection of tuberculin is conservative treatment. It may work an improvement, but I would not give it to my own family. I still believe it is apt to be a local trouble generally.

Regarding the use of drugs: I cannot think much medication is good for tuberculosis, but occasionally I have had good results and especially with the derivatives of creosote. It is bad for the stomach, but there is a preparation of creosote that certainly has produced a good result. I have a patient now who vomited after every meal, but now she retains her food, and I have used it on others.

Sanatorium treatment, which the doctor spoke of, is very good. The general trouble, perhaps, is that all patients are apt to be treated alike, and I do not think that is a wise treatment. I do not believe there is any one patient that should have the exact treatment of another. There are many good things about Dr. Taylor's paper.

DR. H. M. BRACKEN (Minneapolis): I have nothing to say in discussing Dr. Taylor's paper further than to express myself in favor of the sanatorium treatment of tuberculosis.

I wish also to speak in defense of tuberculin when properly used. Too much unjust criticism has been passed upon this valuable diagnostic and therapeutic agent.

STRANGULATED HERNIA

BY CHARLES C. ALLISON, M. D.

OMAHA, NEBRASKA

Surgeon to St. Joseph's, The Wise Memorial and the Presbyterian Hospital

The mortality from strangulated hernia has diminished with the steady refinements of surgery, but the greatest gain has been made by varying the operative steps to meet the pathological conditions encountered during the operation.

The chief dangers which confront the surgeon in strangulated hernia may be briefly stated:

1. Damage to the circulation of the engaged bowel.
2. Danger of sepsis from the escaped contents of the bowel.
3. Toxemia from absorption of the bowel-contents.

Unfortunately, we have no positive method of deciding at the time of operation whether a suspicious coil of intestine, which improves substantially and apparently regains practically a normal appearance, will safely retain the promising improvement or will there develop a subsequent oedema, thrombosis, and paralysis, if not sloughing, with a fatal outcome.

The practical point is that the length of time of strangulation is not a positive guide in deciding the degree of damage sustained by the bowel. The degree of tightness of the constriction; the amount of trauma inflicted by peristalsis; and the degree of virulence of the bowel-contents at the time, materially influence the chances for reclaim of the bowel and the restoration of its functions after the release of the constriction.

The danger of absorption from an obstructed fecal current after release of the constriction, is well known, and any method which minimizes this toxemia and reasonably settles the problem of bowel security will be followed by a notable decrease in the mortality.

Classification of the degree of the emergency, while arbitrary, aids in a practical study of this subject. To illustrate:

Class A. In the most advanced cases, where the vitality of the bowel is clearly lost, associated, as it will associate, with a general condition of the patient which will not warrant any extensive surgical procedure, establishing an artificial anus offers the best chance for the patient's escape from one of the gravest surgical emergencies. This operation can be done under cocaine. No delay should be made for elaborate preparation, and the secondary operation can be done at a time when the patient has completely reacted and the septic contents of the bowel are well controlled.

Class B. When the segment of gut is in a doubtful state, and when there has been good improvement, but not prompt and complete return

to normal, upon release, followed by moist packs, we believe that it is the safest practice to lay this segment of the bowel upon a pledget of gauze, secure it with a catgut suture in the wound, and allow nature either (a) to establish an artificial anus, or (b) completely to reclaim the integrity of the bowel-wall. In the former event, do the secondary operation of closure of the bowel or a resection at a safe period.

Too many obscure dangers confront us in the form of shock, septic absorption from the bowel-contents, peritonitis, paralysis of the bowel, due to thrombosis and oedema following constriction, and the more obscure dangers of mesenteric thrombi, and arterial obstruction, to warrant a complete primary operation in class (A) or its general use in class (B).

Furthermore, we believe that end-to-end anastomosis as a primary operation is never justifiable; for, even though we escape shock and peritonitis and have excised clearly into the healthy bowel, there yet remains the danger of permanent obstruction due to circulatory and septic changes, or a fatal paralysis due to disturbances in the nerve-supply in a bowel lately distended and exposed to toxins at a period in which the acute process is increasing, rather than receding, and the tolerance of the cells correspondingly diminished in the absence of a relative immunity, often established in a less urgent type of abdominal sepsis.

Herein exists a difference between management of an unrelenting, mechanical obstruction, like strangulated hernia, associated with increasing sepsis and the obstruction resulting from the varying degrees of sepsis, as in appendicitis, which offers very reasonable prospects of subsiding under the treatment of rest, aided by emptying the bowel from below, so as to lessen the trauma of peristalsis, during the employment of which efforts there is frequently developed a degree of immunity to sepsis, which accounts for the difference between success and failure in a proportion of cases relatively large. Exceptions to this behavior occur in the virulent types, where only the earliest operation can possibly avail.

The statement that these so-called fulminating cases of appendicitis have passed through a period where an operation may have been safely done has little practical weight, because that period is often passed before the first physician sees the case, to say nothing of the additional time required to bring the surgeon.

We contend, however, that, broadly speaking, the infliction of an operation upon an increasing

peritonitis, wherein peristalsis is arrested, when followed as a routine practice, results in a greater mortality than the more conservative plan of operating *after gas has passed*, even though some time is consumed in efforts to secure this result.

There will always be met a small proportion of cases, which are irregular in their course, in which the judgment of the surgeon will be moulded by the individual symptoms, and it is because of the difficulties in viewing this class from the same standpoint that has led to so much contention upon this subject.

Strangulated hernia, however, presents a more uniform picture, the chief point being that a two-stage operation affords greater security than the theoretically more attractive procedure of primary bowel-resection and radical cure.

Lavage, and persistent, low pressure, normal-salt enemata, and a moderately elevated position supplement, in the most satisfactory way, the surgical measures.

If anastomosis be deemed advisable as a primary operation (we think this is rare), the lateral operation is considerably safer, and this procedure, moreover, will meet the indications more safely in a majority of those cases requiring the secondary operation after an artificial anus has been established.

SUMMARY

1. The *two-stage* operation in advanced cases of strangulated hernia is safer than the primary, complete operation.

2. Lateral anastomosis is safer than the end-to-end operation.

3. The post-operative dangers of ileus are many, and in strangulated hernia the hope of escaping them by delay is groundless, thus differing relatively from the usual obstructive symptoms of appendicitis.

REPORT OF AN UNUSUAL CASE OF INGUINAL HERNIA*

BY W. F. KELLER, M. D.

SIoux FALLS, S. D.

This case was an unusual one for me, and I am in hopes of getting a great deal of information from this intelligent body of physicians.

About one year ago Mr. B., aged 58, of rugged appearance, but of a long course of dissipation dating back many years, called at my office to consult me in regard to a rupture. He informed me that he came to me because he had a friend that I had treated successfully about a year previous. After looking him over I told him his friend had a very large hydrocele that contained three quarts of fluid, but he had a more serious case, and that tapping would not result in a cure. He insisted, and after getting the measurements, which were 14 inches in length, 24 inches in circumference, and a small wave to the mass, I inserted a small trocar and evacuated about three ounces of serum and blood. I withdrew the canula and found a new area with the same results. I informed him that he had a hernia, but was unable to tell him what else the sack contained, and advised an operation. He left the office and remarked that he felt somewhat better for the ordeal he had just gone through.

After one year he returned and wished me to repeat the same treatment. I told him it was useless and that he had better go to the hospital and have the proper care and treatment, but, as before, he insisted and asked if Dr. P. might be present. I was willing. Dr. R. and Dr. P. came

and palpated and manipulated the tumor carefully and were sure of fluid. I was somewhat skeptical on account of my previous experience, but the parts were made aseptic, and a trocar inserted, but nothing except a small quantity of blood was found. The friendly physicians suggested a new field, with the same results. Then a larger trocar was inserted, but still no fluid. Dr. R. thought probably the fluid was so thick it would not escape by the canula and proposed the knife, but the patient objected to that, and he was left to rest in the chair. After resting he returned to his room, and after two hours he sent for me to come and give him relief. On entering the room he made the remark: "My guts are kinked," and that he had the same feeling many years ago and the doctors had returned them. He had an anxious expression, a wiry, rapid pulse, and large beads of perspiration all over his body. Knowing him so long, and the quantity of liquor he drank just before he came to the office, I gave him a half grain of morphia hypodermatically with very little ease from it. Then I sent for chloroform and for Dr. P. and tried to reduce the hernia, but without any success, but advised him to go to the hospital to be operated upon. He said he would rather die first.

We left him, and two hours later his friends had him at the hospital. I ordered him to be thoroughly scrubbed, given a rectal enema, and prepared for the operation. Ether was admin-

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istered by Dr. P., and Dr. R. assisted. I made an incision six inches in length on the right side of the scrotum. I was surprised to find ten or twelve ounces of inspissated blood and four or five ounces of fresh blood, and a large indurated mass of omentum that weighed three pounds. The intestines were strangulated and very much distended. The tunic of the testicle was very dark, and the testicle was very soft and flabby. The history of the man and the copper-colored marks on his body suggested to me a specific disease, and I thought I was justified in removing the same. I enlarged my opening up through the canal into the internal ring before I could return the intestines. Then I closed up the opening with tendon and silkworm gut, with iodoform gauze at the lower end of the scrotum for drainage.

After gaining consciousness, his temperature was normal and remained so up to the third day about noon; then it advanced to 103° at 6 P. M. He succumbed at 3 P. M. the next day.

Do not think for one moment I want to lay his death to other causes. I gave a death certifi-

cate of "Peritonitis, result of an operation," but I do want to state that I want no more alcoholic subjects. This man stated to me the next day after the operation that he usually drank a gallon of whisky a day without getting full, and I don't doubt it. I could not get enough in his stomach, on account of constant emesis. He would not let me lavage the stomach, nor could I get him to let me insert a rectal tube often enough on account of a stricture of long standing of the rectum. He said he had had no normal passage for twelve years or more. The day before his death, and before his temperature advanced, he commenced to see objects of different kinds.

I got no pay for this operation, but many curses from his relatives for operating, also from one or two of our local fraternity.

I have the large mass before you for inspection.

(The discussion of this paper by Dr. Knott, of Sioux City, Iowa; Dr. Summers, of Omaha, Neb.; and Dr. Rock, of Aberdeen, S. D., was not taken down by the reporter.—EDITOR.)

THE TREATMENT OF INEBRIETY*

BY HALDOR SNEVE, M. D.

Alienist and Neurologist to the St. Paul City and County Hospital, Etc.

ST. PAUL

The legislature of 1906 and 1907 committed the state of Minnesota for a second time to care for the unfortunates who are the slaves of alcohol or some narcotic drug. The first time, we attempted to care for our inebriates at our insane hospitals, but the experiment was not successful, and after a few years' trial it was given up. The treatment in these cases was simply that of sequestration. This time we are to attempt an active treatment for the reclamation of these unfortunates. The fact that the Keeley and other institutes treat hundreds every year in this state, and that twenty-five hundred "drunks" were committed to the workhouse of Ramsey county alone in 1906, a large proportion of whom are chronic inebriates, shows the need of a place where pay-patients may receive treatment for this trouble and where those without means may be rescued for their families and restored to useful citizenship.

For a proper understanding of the questions at issue, we must have some knowledge of both patient and narcotic.

PSYCHOLOGY

Man is governed in his actions by the functioning of his brain. The brain may be likened to the wax cylinder of a phonograph: it records the countless impressions streaming to it through the senses and gives them back through the medium of the muscles, either as deposited or variously associated or combined. You may be sure that if you deposit French, Chinese will not be returned, and, further, that nothing will ever be given out which was not put in. It is true that new combinations of impressions may appear, and these we call inventions, original creations, and the like. The functioning of the brain we call mind and make of it an entity, ascribing to it various properties, such as reason, judgment, memory, will, emotions, and consciousness, the highest of all. We could also say that consciousness alone is mind, or, better still, we could say that mind is the reflex action of the brain cells; and since all impressions coming to the brain are associated, the responses are correspondingly complicated. The response to a given stimulus depends on the strength and association of impressions deposited previously, either of the same

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kind or of an analogous nature plus the strength of the immediate suggestion. According to this view free will does not exist: we simply react according to the strongest impression, past or present. He who fondly imagines that he exercises a choice of action is deceiving himself; he will react to the most powerful suggestion just as inevitably as the weather-vane will be turned by the wind. We do not start out with a mind. We must acquire it through impressions from without; hence the overshadowing importance of environment, which we will assume means everything not supplied by inheritance. The character, the ego, built up by training, will determine the conduct of the individual. "As a man believes so is he." The repetition of certain impressions and of mental reactions creates habit; and so the fingers of the musician can execute the most complicated movements with ease after laborious training, and so do our minds respond in the way that they have been trained. Inhibition, or applying the brake, is one of the chief faculties of the mind, and the cultivation of this by training is the essence of morality.

We are all born savages and we might say criminals, and in spite of the training of our ancestors through centuries we do not inherit morality, but we must each one be trained up to obey the laws of the society we live in. Morality is a geographical affair. Broadly, a man will think and act as do the fellows of his environment. Our habit as regards morals is what we call character.

HEREDITY

From our ancestors we inherit form and structure in cells; and what we ultimately are capable of in oratory, painting, fiddling, or dancing, as well as in whisky-drinking or opium-smoking, depends solely on cultivation. The distinguished English pathologist, Bevan Lewis, says that we cannot inherit alcoholism as such, neither do the offspring inherit the tissue changes produced by alcohol in the tissues, but he assumes that the chromatin threads in the germ-cell-nucleus, which is the supposed vehicle of heredity, may be so affected by alcohol in the parent that, later, a functional instability is the result of a defective organization of the neuron or a molecular degradation of nerve tissue. In tuberculosis and syphilis he admits that there is no real hereditary inheritance at all; in the first case there may be a diathesis producing a predisposition, and in the last it is only a question of infection from antenatal contamination. Can anyone believe that an evanescent poison like alcohol

can in any way affect the ovum or spermatozoon enclosed in their fibrous envelopes in such a manner that the highly differentiated structure of the brain in adolescence or adult life resulting from their union and development will demand high-balls or cocaine? As babies and children the demand for stimulants of this class is certainly not present. Why do not women inherit the habit as well as men?

It is no more possible to inherit a taste for liquor than it is for tobacco or French salad-dressing; all must be acquired. We have been under the domination of a psychology which has had religion so bound up with it that we have hardly dared to study it, and our ideas of heredity have been largely represented by Oliver Wendell Holmes' *Elsie Venner*. Dr. Holmes thought that the indispensable qualification necessary to make a statesman or a scholar was to have an ancestor who was either a statesman or a scholar. Is it necessary to more than point out that the United States is a colossal refutation of such ideas? Our workers in every field of human endeavor are the peers of any civilization, and no matter how much a false pride would make us desire it, the ancestors of our distinguished sons did not come from the intellectual stratum of European society.

ALCOHOL

All vital action is the result of some stimulation. The nervous system requires certain sorts or stimulation aside from mere nourishment. In our countries alcohol and the alkaloids of tobacco, coffee, and tea are used as such. In the Orient opium is also used. Attempts to banish alcohol from a people have always failed, and where this has been even temporarily attained some other stimulant has taken its place, as, for instance, in Ireland where the far more injurious ether succeeded it. We can give to alcohol a place as a valuable stimulant, and the progress of culture will consist in controlling and limiting its use, just as we satisfy any other desire. (Bratz: *Die Behandlung der Trunksuchtigen*.)

Perhaps it is unfortunate that alcohol is the potent key that unlocks good fellowship and those vivid flights of imagination which inspire the orator, the poet, the musician, and the artist, as well as the more prosaic worker. In small doses alcohol stimulates not only the brain but all the functions of the body; in larger doses it is narcotic and stupefies. It is one of the kindest poisons to the human tissues, as with no other does recovery from changes in vital organs so promptly ensue upon withdrawal. Fatty changes

in heart and liver, sclerosis of arteries, kidney diseases, delirium, nerve pains, fits, and ataxic and parietic symptoms disappear like magic. Attack after attack of delirium tremens may still leave a respectable residue of human being.

The continued use of alcohol to excess induces various bodily ills and later disturbances in the mental sphere; there is a gradual undermining of self-respect, loss of ambition and energy, dulling of the finer feelings and sensibilities, and a heightened emotional irritability. In persons disposed to mental unbalance, the steady poisoning by alcohol and the repeated overstimulation leads easily to insanity. Although alcohol can thus become the agent which produces both physical and mental disease, the real underlying foundation which determines the outcome is the physical, mental, and moral makeup.

The acquisition of the habit of stimulating by alcohol creates a desire on the part of the body which nothing but alcohol seems to satisfy. Other stimulants, like tea, coffee, and tobacco, however, may take the place of alcohol to a certain degree, but the excessive use of these also leads to very deleterious results, inducing stomach troubles, malnutrition, blindness, and degenerations in the nervous system.

Alcoholism perhaps entails more misery on the human race than any accident that can befall the individual because of the economic loss to the family or dependents, the wage-earner being the victim generally.

These few reflections on psychology and heredity are meant to indicate that the wall we build against inebriety as well as crime is the cultivation of character by proper education, the cornerstone of which is self-respect, which is the principal brake we can use to hinder us from the commission of excesses in the satisfaction of our desires. To assume that inebriety is a hereditary disease means that we inherit a taste and a habit, both of which, in my opinion, must be acquired. The whole Caucasian race, at least, ought to be drunkards according to the first view, because the day is not long gone when getting drunk was the usual and proper diversion of our forefathers. Why do physicians so frequently become victims of the morphine habit? Do you think that it is because they have inherited a taste for the drug or a fatal defect in brain structure which drives them to its use? Or is it the temptation of association which leads the doctor to take a dose when overstrained or overtired to meet the demands of his work? Physicians as a class carry the heaviest burdens of worry and responsibility.

Life or death is the stake they play for, to say nothing of the reputation, the bread and butter, and the personal risk to health involved. These abysses of mental strain seem to demand a compensatory correspondingly powerful offset to strike a balance as it were, and this, in my opinion, is a potent factor in leading to the commission of excesses.

CLASSIFICATION

I would make three classes of inebriates based upon the foundation or soil acquired or inherited upon which has become engrafted the habit.

The first and largest class is the fairly normal individual who begins the use of alcohol because his associates use it or for the sake of good fellowship and gradually in the manner so well known becomes the slave of the *habit*.

The second class is represented by the neurotic, who readily becomes the slave or who is forever hovering on the border of some departure from normal acts, and who requires constant care to keep him within the bounds of a normal life. Even here environment, and not heredity, in my opinion, has made the neurotic. A neurotic is essentially an individual whose self-control is defective from improper training.

The third class is made up of the insane, the mentally defective, and the vicious. The sufferer from periodic brain-storms, who discharges a form of periodic madness through excesses in drink, is the real dipsomaniac, and if we speak of *drink disease* we should limit the term to him. This rather rare individual may live the most correct life, but periodically he breaks out and stupefies himself until the storm is past. Other insane and mentally defective individuals drink to excess, and their condition is frequently blamed to alcohol, but they drink because of their insanity, just as they may masturbate to excess, the habit being the result, and not the cause, of their disease. The criminal classes nearly all drink to excess, and we find as constant inmates of our workhouses and reformatories hoboes and bums who represent deviates or defectives or a low order of mentality because of improper environment or disease.

The proposition that all victims of the drink habit are suffering from a disease which can be eradicated by drugs is absolutely preposterous, and the fraud of the Keeley and other cures is therefore apparent and explains the numerous relapses of their graduates. Then why do these institutes sometimes cure their patients? It is because the patient belongs to our first class of inebriates and wants to be cured. It rehabilitates

his self-respect to say, "I am a sufferer from a disease which now, thank Heaven, is cured, and I can take my place among my fellows without the stamp of either viciousness or weakness."

The American Society for the Study of Alcohol and Other Narcotics, founded in 1848, early adopted the idea that inebriety is a disease, essentially an insanity, and its members were and are active propagandists of this view. The foremost member of the Society and editor of the *Journal of Inebriety*, Dr. T. D. Crothers, of Hartford, Conn., does not stop here, but advances the opinion that every moderate drinker is insane. The result of these views is shown in the laws of the various states, and, I may add, in the failures of treatment based on this erroneous conception. I quote from an address by Dr. Reed:

"In the District of Columbia at present inebriates are committed by proceedings obviously based on the theory that they are insane—at least the fact that they, like the insane, are committed after inquisition by jury in open court to a hospital established and conducted for the insane, bears out this theory. This, of course, is fundamentally and scientifically wrong. But assuming that the implied classification of such patients as insane is justified by the facts, the failure to commit them for a long enough time to subject them to successful treatment places the whole proceeding at variance with public policy. Thus, these cases, as soon as they are sober, demand to be dismissed, and, if this is denied, institute habeas corpus proceedings, with the result that they make such an appearance of physical health and mental soundness that they secure their discharge. The inevitable result of such premature discharge, before the physical conditions have been so far restored that the will power and the moral sense can reassert themselves, is a relapse into former habits. The final consequence is that the whole system, extensive enough, has a tendency to perpetuate rather than to curb inebriety. It is, however, the obvious duty of Congress to protect these victims of disease and, as far as possible, restore them to health. To this end you are invited to consider the terms of a measure by which inebriates in the District of Columbia may voluntarily commit themselves, or may be committed by court for a definite period, having possibly a maximum limit of one year." (Extract from an Address by Dr. Charles A. L. Reed on "National Medical Legislation.")

PROGNOSIS

Dr. C. L. Dana found that if a person has not

indulged to excess before he is 20 years of age he is not likely to become an inebriate.

The Farmfield Reformatory for Inebriate Women, at Horley, England, gives 25 per cent of cures. In Ellikon, near Zurich, from 1889 to 1895 of the 95 patients discharged 43 per cent became abstainers, 25 per cent could control their drink-habit, and 31 per cent relapsed.

One of the first institutions in the world for the treatment of inebriety was established at Binghampton, New York, by Dr. Turner, in 1864. After 14 years of existence it was given up as a failure.

There are very few institutions for the scientific treatment of the drink-habit supported by the state in this country. Iowa established a State Hospital for Inebriates last year and reports 25 per cent of cures, but it is too early for reliable statistics. We hope that the Minnesota Hospital Farm will cure at least 50 per cent.

The prognosis will depend largely upon the age and the physical and social condition of the patient. After years of the alcohol habit and when the recording phonograph of the mind can with difficulty assimilate new things, it will be hard to form a new character. Physical disease and deterioration will be serious obstacles to reclamation. Years of vicious environment and lack of mental development will render the task of inculcating a new philosophy of life difficult.

TREATMENT

The treatment is of two kinds: first, to restore the physical health of the patient; and, second, to develop the character to prevent a relapse. In order to compass this, Minnesota is to establish a farm large enough to furnish all kinds of work in the open air. There should also be shops for the various trades. In order to allow of a proper classification of the inmates and to make their stay more pleasant, the cottage plan would be the best, with rooms containing from two to four beds. A large central building could be constructed for an infirmary with the offices, amusement hall, library, and dining-room, and radiating from this like the spokes of a wheel could be the cottages. Everything that smacks of prison or insane asylum should be avoided; the grounds could be enclosed by a hedge. The farm should be located, if possible, convenient to the Twin Cities for the sake of economy and because of the ease in securing lectures, etc. The superintendent should be a physician, preferably an alienist, and as the success of the farm will be largely dependent upon his ability to inspire the proper confidence, spirit, and hope, to en-

force discipline and build up the moral character of the inmates, great care should be exercised in his selection. To direct the farm operations a competent graduate of our Agricultural School should be chosen, or the farm could be made an experimental addition to the State University under the direction of its professors. Trades should be taught the inmates, and the products of the shops, the dairy, and the farm can be used in our other state institutions, or sold to aid in its maintenance. When the patient is first admitted he should be placed in the infirmary, where proper medicinal and hydrotherapeutic measures can rid him of the immediate toxic effects of the alcohol. There must be physicians and trained nurses, and patients can be utilized in part as helpers. Sleep must be induced, and the catarrhal condition of the stomach removed by diet and hot water. Cayenne pepper and infusions of the vegetable bitters, such as cinchona, gentian, and quassia, will here find a field. For general tonic effects nitrate of strychnia in solution for hypodermic use enjoys a wide popularity. Since so large a part at this stage of the management is played by the proper use of hydrotherapeutic measures in the shape of packs, full baths, and douches, ample provision should be made for carrying out properly this side of the treatment.

Careful records of the physical examination and history of the patient should be made upon admission and quarterly notations made of the patient's status. When the patient is sufficiently recovered, he should be assigned to a cottage with a suitable companion and put to physical work. Now comes the arduous training of the morale by lectures, association, study, and example, to inspire in him the earnest desire to abstain from the stimulant which degrades him. The literature shows that *at least one year's treatment is necessary to attain a cure*, and we cannot too strongly urge that the patients be kept long enough to make them strong enough to resist

the temptations of the outside world. Teachers must be provided to assist in the mental and moral uplift.

The question of discipline is a difficult one. For ordinary cases curtailment of privileges and luxuries, such as tobacco, may suffice, but some of the worst offenders may require solitary confinement and restricted diet as coercive measures; however, the main reliance must be the moral persuasion of the officers and the other patients.

Total abstinence is the only condition to be aimed at, as any compromise in this direction is sure to result in failure. It is a curious fact that most inebriates think that they have the power to drink without taking too much. The patient is only two-thirds cured when discharged from the farm. The right sort of influence and environment upon his release will determine whether he is to remain permanently relieved, and here is where the various lodges and societies for temperance should find a most fertile field for beneficent effort. Chapters and lodges could be established at the Farm, and these societies should actively assist in keeping off sinister influences when the patient resumes life outside.

The treatment of sufferers from a drug-habit is essentially the same.

The Minnesota bill provides for the filing of information with a probate judge and a trial by a board of two members, one of whom must be a physician, practically in the same manner as practiced in insanity cases; commitment is for an indeterminate period with a parole system and reports to the probate judge once a month while out on parole. The farm is to consist of not more than 640 acres of land and is under the management of the State Board of Control. Lastly, provision is made for voluntary commitment, so that patients may become inmates of the Farm after signing the necessary papers and then paying such sums as may be fixed upon by the Board of Control for a stay at the farm.

HERNIA*

BY HENRY J. ROCK, M. D.

ABERDEEN, S. D.

There seems to have been no advance in the treatment of hernia since the time of the eminent Bassini, excepting a few minor changes in its operative technic, which, by the way, are very questionable changes. For example, the trans-

plantation of the cord is, in the writer's judgment, a flagrant error and a direct insult to all anatomical law.

Hernia is classified best into reducible, irreducible, and strangulated. It may be farther classified as to its anatomical location. Hernia is defined as a break in the continuity of normal

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tissue, transmitting a sac and its contents. It may be due to a dilated ring or canal, as the femoral ring or the canal of Nuck.

There is no variety of hernia which produces a pathological condition, and hence there is no bacteriological showing in the absence of strangulation, in which pressure necrosis obtains, with complete death and destruction of the incarcerated parts.

In discussing the comparative frequency of hernia the following important information from the German authors will be of great interest. Of all hernias, inguinal occurs in 73.41 per cent; femoral, in 18 per cent; umbilical, in 8.47 per cent; the remaining 12 per cent represents all other varieties. Males are more frequently affected. In males 96.33 per cent are inguinal; 2.53 per cent are femoral; 15.9 per cent are umbilical; the remaining cases represent all other forms of hernia. In both male and female the right side is the more frequently affected.

As to the cause of hernia in general, we may mention age, involving the active period of life, the frequency declining in a direct ratio with the advance in years. Secondly, owing to the more active pursuits of the male, he is most frequently affected, the proportion being 6 to 1. Thirdly, the conformation of the abdomen. Fourthly, abnormally long mesentery. Fifthly, ptosis of the abdominal organs, Glenard's disease.

In general, the exciting causes are occupation, pregnancy and parturition, inguinal and femoral hernia more frequently following parturition. Secondly, an increased deposit of fat in the omentum, and, thirdly, neoplasms, and many other causes, such as coughing, sneezing, the crying of infants, straining at stool, tight lacing, and ascites.

The clinical varieties presenting themselves in the daily practice are the reducible and irreducible. The former is one whose sac and its contents are easily returned to the abdominal cavity. Such a hernia may remain for a period of time and become irreducible. This is particularly true with omental hernias; also when the sac contains bowel and omentum. It rarely ever occurs when the sac contains bowel alone.

The best evidence of reducibility are, first, a soft, elastic swelling, with an expansile impulse on coughing, or an increased protrusion on straining, a sense of local weakness with more or less discomfort. Tenderness is usually present in the location of the hernial ring.

The treatment of reducible hernia is mainly palliative and surgical procedure. Personally—you will please pardon the seeming egotism of a private judgment—I am of the opinion that all hernias existing prior to the age of four years and having endured a truss-life of one year or occurring in children after the age of four years

who have worn a truss for one year and yet remain uncured, should submit to a radical cure. This I submit, fully realizing and understanding the patency and collapsibility of the canal in infancy and young childhood. I would operate upon no child under four years of age in the absence of strangulation or the complicating condition of hydrocele of the cord. Such patients are given a truss-life and insist on wearing the truss day and night for a period of one year at most. If such a patient, at the expiration of one year, be uncured, I would then operate regardless of age. I would have but one truss, the Honest John. I would fit it on in the horizontal position having the hernia completely reduced and insist on its continual application, in no event omitting it at night. In no case would I apply a truss at any age in the presence of an irreducible hernia. Children, and particularly female children, should not wear a truss longer than one year, as it produces distortion of the pelvis. The skin under the band and the pad should frequently be bathed and washed in alcohol to prevent excoriation and infection. In no event would I endanger a child or an adult by the so-called injection method, and for reasons too numerous and too evident to admit of argument. Gangrene and abscess are the major contraindications and subsequent history disproves a cure. Rarely is one ever cured either by a truss-life or the injection method. I have no time for the argument that young children's tissues are soft and are not capable of holding the sutures used, or that they are so restless that the retention of the parts is impossible. In my experience the tissues are distinct, and are capable of holding and absorbing the suture material used, and children are less restless than adults. In proof of this position, I speak of the extremes of age, the youngest being a boy of three weeks and the oldest a man of 76, in both of whom the hernias were strangulated, and the patients were prostrated from shock.

I believe that hernia, of any kind or any and all ages, is a surgical proposition, unless marked contraindications present themselves. The few children who are cured by truss-life are not comparable with those who die from strangulated conditions, notwithstanding they have been given a truss-life. Many surgeons in time gone by, as well as at the present day, advocate no operative interference before the twentieth year of life and not then if the sac can be retained by any kind of mechanical support. At or after puberty a cure from truss-life is never expected by our present-day surgeons, and thousands who are given over to truss-life die annually of strangulation before the twentieth birthday, who could have been saved from a premature grave had they been given surgical preferment and treatment. The older authors taught that in all scrotal and large hernias and those not retained by

the truss-pad should be operated upon at once, regardless of age. Wherein can we err in going a step farther, and saying that all hernias have one treatment, and that is surgical. They also taught that all femoral hernias, which, by the way, are most rare in children, should be operated upon immediately on their appearance, which was good dictum and should be strictly followed at the present date; therefore, wherein can the present day surgeon err in advocating surgical interference in all cases of hernia, regardless of age, excepting in umbilical hernias in children, which never require surgical intervention, and are invariably cured by mechanical appliances, in the form of oxide of zinc adhesive bands. The two reasons, and the only ones required in arguing for surgical relief, are, first, the saving of human life, and, secondly, the avoidance of human suffering, which are the sum total of the requirements of any physician.

In irreducible hernia we have a part of the sac-wall and its contents adhered to the ring, and it is impossible to render a complete reduction into the abdominal cavity. A simple irreducible hernia has no inflammation, no strangulation, and no interference with its normal blood-supply: however, it is more subject to inflammation and strangulation. The causes of an irreducible hernia are, first, age. In children it rarely ever occurs, owing to the absence of omentum, and the rare occurrence of an enterocele having adhesions. Secondly, sex, the female being most liable to femoral and umbilical hernias, which are invariably subject to adhesions, and, thirdly, carelessness in kind of truss used, or the habitual neglect of truss.

The symptoms of an irreducible hernia are, first, tumor, on assuming the horizontal position, and, secondly, if apparently a reduction occurs, the hernia will re-occur while in that position; thirdly, an impulse on coughing; fourthly, if the hernia is large there will be pain of a dragging nature and it may be colicky, with disturbed digestion and constipation. It is in such hernias that we find strangulation in children. Their only treatment is surgical, regardless of age or any fancied condition. Any hernia may become inflamed, and the inflammation may attack the hernial sac or its contents, or both. Omental hernias are most subject to inflammation, and the form of hernia most frequently involved is the femoral type.

The causes of inflammation are trauma, acute strangulation, extension of the inflammation from the bowel, tubercular adenitis, and, lastly, pressure-effects from neoplasms. The prognosis is favorable in young and middle-aged subjects and unfavorable in the aged. Adhesions are the result, subsequent to inflammation, and this fact renders such hernias more subject to subsequent attacks and absolute strangulation.

They should never be operated upon in the absence of strangulation, owing to the added danger of infection. While acutely inflamed, we should apply ice with absolute rest in bed in a horizontal position, with free purgation following repeated and voluminous enemata. If the inflammation persist the parts will slough, and in such extremities a free incision is indicated, establishing drainage and relieving pressure.

Incarcerated or obstructed hernia is one whose sac contains a loop of bowel filled with a fecal mass incapable of passing the loop. It occurs only in irreducible hernias and is never due to gas. The symptoms are constipation, distress, tenderness over the parts involved, and in severe cases the symptoms are similar to strangulation symptoms. The gradual development of the symptoms is the chief differentiating point. It is the one symptom. The pain and tenderness are slight, as a rule. There is a gradual increase in the size of the tumor, which is doughy to the feel and dull on percussion. Constipation is not usually complete. Nausea and vomiting may be present, but not alarming. It is not a serious condition excepting in the aged, and its best and only treatment is frequent and copious enemata, which are followed by a thorough saline purge.

A strangulated hernia is an irreducible hernia in which a loop of intestine or a mass of omentum, or both, is so constructed as to interfere with the normal blood-supply. A strangulated omental hernia is rare. In my experience I have found it only once in seven times. All forms of hernia are liable to strangulation. Rarely are reducible hernias strangulated beyond reduction. All irreducible hernias becoming strangulated fail of or resist reduction, regardless of the age of the strangulation.

The cause of strangulation is due to more or less compression made on the loop of bowel by the unyielding tissues of the ring. This occurs, and interferes with the return circulation of the venous blood, and engorgement ensues, with a resulting infiltration of the bowel-wall, which gives off a serous exudate into the hernial sac. The bowel-wall becomes thickened, and the pressure thus formed interferes with its function, giving rise to gas-formation, which adds to the pressure-effects sufficient to cut off its arterial supply resulting in pressure-necrosis and gangrene. The symptoms of strangulation are pain, vomiting, absolute constipation, prostration, and final collapse. Vomiting is the one cardinal symptom. It is persistent, gushing in character, and noticeable from the projectile and large quantities vomited. It is caused, first, by a stimulation of the abdominal sympathetic plexus; later, to a reverse peristalsis or upward axial bowel-wave, and, finally, to a stimulation of the vomiting center by septic products.

The diagnosis is made wholly on the symptoms and a history of hernia being present. Its pathological condition is that of pressure resulting in gangrene. The treatment of strangulated hernia is strictly surgical, and none other should be tolerated or attempted, for the following reasons: the mortality of reduced strangulated hernia, by whatever method, is 14.9 per cent in femoral hernia and 7.8 per cent in inguinal hernia. It demands prompt operative procedure. If seen early an attempt at reduction is excusable if originally a reducible hernia. If an irreducible hernia, no attempt at reduction should be permitted. If seen late, all attempts at reduction should be absolutely discouraged from facts too evident. First, inflammation may be present. In irreducible hernia adhesions are invariably present, and the probable reduction en masse is to be feared. Infection is liable to be carried into the peritoneal cavity, resulting in a fatal peritonitis. Shock from the attempt at taxis far exceeds the surgical shock accompanying surgical intervention. Surgical procedure is its only treatment. A general anesthetic is desirable. All antiseptic precautions should be most strictly observed, and the incision should be free and sufficient. On freeing the sac, it should be first opened, thus relieving a large element of pressure by allowing the escape of the fluid which is always present. By so doing the exact condition of the herniated mass can be observed, and its exact condition estimated. The constricting ring should be divided from without inward on the index finger after having drawn down the herniated mass. In rare cases of femoral hernia the constricting band should be divided from within out. In all strangulations a blunt bistoury should be used to protect the bowel from within. On dividing the constriction, the previously opened sac, with its contents, should be drawn down, to better estimate the trauma present. If omentum alone be present, it should be well drawn down and quilted off en masse, tucking in well its stump to prevent subsequent adhesion. If the intestine is incarcerated, it should have the utmost care. In all cases it should be packed in hot applications for many minutes or until the bowel-wall is fully revived. If it shows any signs of revivification then return it into the peritoneal cavity. It has been my experience, in a badly damaged bowel, that, on continued application of heat, the bowel will readily revivify. In but one case out of seven did it fail, and on resection, with end-to-end anastomosis by the aid of the Murphy button, it was restored to the peritoneal cavity. Resection should be the remotest thought until all efforts of revivification have failed. If after due effort resection is the only safeguard to the patient's recovery, following resection we should make an end-to-end or a later anastomosis by the Murphy button or

suture. Never after resection would I establish an artificial anus. Such is simply and truly bunglesome surgery and is never excusable. If beyond restoration, the loop should be resected regardless of its length. Anastomosis is done in probably the safest, the quickest and most efficient manner by aid of the Murphy button. It has been eminently successful in my own and my associates' experiences, the button passing the bowel on the fifth to the ninth day. In the absence of a resection or in the presence of a resection, the subsequent steps of the operation are those of any radical cure of hernia. In the absence of pus, I would close without drainage all such operations, but in the event of perforation or in the presence of infection, I would close by drainage, using a large cigarette-drain and in no event a soft or hard rubber tube, because of its pressure-effect.

In all strangulative, femoral hernias the same precautions as to asepsis, dividing the constriction, revivifying the parts, resection and reduction, are the same as the above. However, I would follow, in closing the ring, that form of operation worked out, followed by, and bearing the name of its inventor, the De Garmo operation. In all umbilical hernias the same rules and technic are to be followed as above; however, in closing the ring, it should be obliterated by overlapping the aponeurosis of the abdominal muscles. I believe it is known as the Mayo operation.

DISCUSSION

DR. C. J. LAVERG (Fort Pierre): I want to congratulate Dr. Rock upon his very fine paper upon a subject of great importance. The doctor's paper goes into the details of the treatment of hernia very extensively.

I have nothing to offer in the shape of criticism other than to speak of some subjects that were probably overlooked by the speaker in his review of the treatment of cases that might occur, and have occurred, in the practice of nearly every surgeon; and, in order to present these subjects, I shall relate some cases in my own experience. One is the disposition of fluid, which accumulates in the peritoneum in cases of strangulation, and the other the importance of preventing post-operative intra-abdominal pressure.

In December, 1902, a patient, S. R., was brought to me in a wagon about 80 miles, suffering from strangulated hernia. He was suffering great pain, having ridden over a rough, frozen road very rapidly. I immediately gave him a hypodermic, making him as comfortable as possible while I prepared to operate. In a few hours after his arrival in town I cut down upon the constriction, relieved the strangulation, opened the hernial sac, and found the loop of intestines in very good condition, smooth but rather dark in color. The color was readily restored by the application of hot normal saline sponges. There was a great amount of fluid present in the abdominal cavity of greenish-brown color. I decided not to make the radical cure at that time, but inserted drainage and the week following I reopened the wound and made a Ferguson operation, securing a perfect result. Recent reports

are that it has remained perfect ever since.

In all cases where portions of the omentum are found present in the hernial sac, I believe it is good surgery to excise as much of the omentum as has a tendency to prolapse, for the purpose of avoiding the dangers incident to intra-abdominal pressure.

Another case on which I operated recently, where the hernia was very large and of long standing, I am satisfied that much more satisfactory results would have been obtained had drainage been inserted in the external wound to take care of the capillary oozing, which resulted from the separation of the sac from surrounding tissues. In this case the complete radical operation was performed and the wound closed and dressed as ordinarily, but inside of 48 hours extensive ecchymosis was present in all the surrounding tissues, which I am satisfied would not have been present had the external wound been drained. The wound healed by first intention, however, and the patient had an uneventful recovery, the ecchymosis entirely disappearing in about two weeks.

DR. E. KLAVERNESS (Sioux Falls): I desire to say only a few words. In 1903 I was called in consultation by one of the doctors in town to see a woman fifty years of age, who lived a few miles out. I found a strangulated femoral hernia and advised immediate operation. The family consented, and the operation was performed by the doctor who had charge of the case.

We found a loop of the small intestine in the hernial sac. It was of a deep bluish-black color with a fibrinous exudate covering that part of the peritoneum. The doctor wanted to take the risk and push it back into the abdominal cavity, but I considered it unsafe; at least I had my doubts about the vitality of that particular part of the gut, and suggested that we follow the safe route of anchoring the loop in the wound and wait for twenty-four hours. The suggestion was complied with, and on the following day we again called at this little farmhouse, but found no improvement or signs of restoration of blood-circulation in the anchored loop, whereupon we performed a resection.

My only reason for mentioning this case is on account of the experience we derived subsequent to the operation. We made use of the Murphy button, and although everything went along without a hitch it took twenty days before we again recovered the long-incarcerated button.

DR. S. M. HOHF (Yankton): I do not believe it is necessary to operate on all cases of hernia in little children. We know that tissues in this class of patients heal quite readily, and if the protruding gut can be retained in the abdominal cavity for a sufficient period of time, nature will very effectually heal the rent in the abdominal wall. I have several little fellows that I know have been cured by the constant wearing, for a time, of a suitable truss. Just how long a truss must be worn depends upon the condition found, but in all cases in which this measure is carried out the little patient should be under the constant observation of the physician and not left to the parents.

Regarding resection of strangulated intestines: I think it is often advisable to wait until we are positive that the gut cannot recover itself before we resect. A dead gut presents a peculiar greenish-black appearance, which means gangrene, and is beyond recovery. It is sometimes surprising how a dark-appearing intestine will clear up and assume a pinkish hue after relieving

the constriction and applying heat. So far as doing a secondary operation is concerned, I should certainly do it every time, if the condition of the patient, because of shock and collapse at the primary operation, so warranted. It may be the means of saving the patient's life, and is surely worth doing, rather than attempting too much at the primary operation.

In regard to Dr. Kellar's case which he has so honestly presented, I would say that in my opinion he is not in the slightest degree to be criticised for the unfortunate result. In the first place, he was dealing with a desperate case of alcoholism and undoubtedly had a diseased liver, as well as alcoholic nephritis, to deal with, which the anesthetic probably intensified. Secondly, the removal of so much omentum need not necessarily cause death. W. W. Keene, of Philadelphia, has removed the entire omentum frequently, and during the winter of 1902-3, I witnessed Dr. Murphy of Chicago do likewise, and with the assurance that there would be little or no inconvenience to the patient.

Recently in my own practice I had occasion to remove a considerable portion of the omentum, measuring 13x14 inches, for an irreducible inguinal hernia, and the only inconvenience to the patient was a sense of coldness over the abdomen during cold weather. This was relieved by wearing a woolen abdominal belt.

DR. H. W. SUBERA (Sioux Falls): With reference to the matter of surgical work for strangulated hernia, much has been said, but what shall we do before we operate is of great importance to our patient, as well as to ourselves. I have had considerable experience in that line, and have been "knocked out" of a good fee several times by packing the parts in ice, and elevating the hips as high as the patient would stand.

I will report two cases that I call to mind. I was called to an old gentleman who had suffered for many years with a large scrotal hernia which he usually reduced himself, but failed this time. I failed. Dr. Olney and Dr. Files were called, and they failed by taxis to reduce the strangulation. We decided to operate, and while we were getting ready we packed with ice, elevating the hips, and when we returned after a few hours the hernia had disappeared. He lived many years after this and never had an operation.

Another case. I was called 15 miles into the country at midnight to see a farmer's wife who was suffering from strangulated hernia. I took with me a piece of ice. I packed and elevated the patient as usual, but returns were slow. After waiting six hours I returned to town to procure assistance, and went back prepared to operate. When I returned to the patient I simply raised the tissues over the stricture, and the hernia disappeared instantly. She wore a truss a number of years, and last year had another attack. I operated, and from appearances at the present time the patient is perfectly sound. In a word, I never advise an operation until I have tried the ice if the case is seen early.

DR. J. E. SUMMERS (Omaha, Neb.): One point occurs to me which I do not think was mentioned by the essayist, neither is it particularly emphasized in works on surgery. It is this: the color and odor of the fluid in the sac of a strangulated hernia is always an index to the condition of the hernia's contents. When the color of the fluid is very dark the integrity of the circulation in the bowel is always in doubt; if there is an odor there is no question but that either a resection or the establishment of an artificial anus is demanded.

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JANUARY GREETINGS FOR 1908

THE JOURNAL-LANCET enters upon its renewed contract with the Minnesota State Medical Association for a period of three years. The aim for the future, as in the past, is to publish the transactions of the Association and to present papers from leading medical men in the Northwest, in order that the medical journal may faithfully represent its territory. A further aim is improvement in all the departments, and to vary its reading matter from time to time for the advancement of other and newer scientific subjects.

To those who have contributed to this success we offer our thanks for past favors, and ask for a continuance of confidence and support. It is not an easy task to provide a satisfactory medical journal for every one. Long hours of painstaking labor, and the assumption of great responsibilities, fall upon all of the workers, — printers, publisher, and writers. To do this work requires much time and patience. The reward is not in financial gains, but in the satisfaction that the publication is presentable, instructive, and readable.

At times the number of articles is in excess and occasionally works a hardship upon the writers

by unavoidable delays in publication. Occasionally an article is returned to the writer because in the judgment of the publication committee and the editor the subject is not attractive or its contents not suitable for a current issue. This does not necessarily mean rejection for offensive or defensive reasons, but simply for the good of the journal. Writers whose manuscript is returned for revision or curtailment should not be discouraged or disgruntled, but should strive to improve upon their former diction. The preparation of an article for a medical journal is a form of post-graduate training and must be so considered. If all articles were returned to the writers with the revision and correction that are frequently necessary, some hard feeling might exist toward the editor. Fortunately, the average writer is willing to have his manuscript revised or re-edited. The aim of the writer therefore should be to present his subject in the most attractive and carefully worded form and to learn to express his ideas in a concise manner. Clearness of thought and expression and carefulness in preparation are qualifications to be attained. The tendency of the time is for brevity and solidity.

Here is an opportunity to advance the science of medicine in the Northwest, here is the medium for publication. May all of our readers enter upon the New Year with happy and prosperous prospects!

MR. TILL OF SOMERSET

One Mr. Till, of Somerset, Wis., an unkempt-appearing man who wears long hair and no shoes and who has faked the people of Wisconsin and adjoining states, has been obliged to relinquish his lucrative practice because the medical men of Wisconsin object to his methods.

He is one of the numerous one-idea-men who treat all sorts and conditions of disease by a single method or remedy. His fame hangs on a sponge which is saturated with croton oil and rubbed up and down the spines of the willing. The same sponge and the same solution answer for all, and the sponge is in constant use, rubbing the backs of the sick and the well, the clean and the unclean, till it is worn to a frazzle; then, let us hope, a new sponge is called for and takes up the burden of the one discarded. For some unexpected and wholly unlooked for reason many victims of the dirty croton-oil sponge developed infected backs, and, if the newspapers are to be believed, a few unfortunates died from infection.

In the course of time, after Till had accumu-

lated much money and his farmer friend who ran a bus-line and gave tickets to the waiting throng and thereby made more money than by honest farming, the medical profession, after three attempts to put an end to the nefarious business, finally succeeded in having Till fined and ousted from the state. Since then the provident and prudent Till has cast longing eyes on Minneapolis, the supposed abiding place of many irregular practitioners. It is rumored and incidentally advertised that the former doctor, mayor, and politician, A. A. Ames, has come to the rescue and will permit Till to associate himself with him in his office where the mantle of protection will be thrown about him. The former doctor believes Till has been persecuted by medical men and when a man has a good remedy it should be placed where the public may reach it—for money. Hence Till may become associated with Ames and become his assistant or may treat the public under the eye of a practitioner; in a word, he becomes an assistant and practices under the direction of a licensed medical man and thus evades the law and all responsibility for his peculiar form of treatment.

Such a condition should not be permitted, and some plan must be devised to prevent such a co-partnership, which can result only in ultimate failure after the people have been separated from their money. Let us hope the rumor is untrue and that Till may decide to go where medical laws are lax, but, if he comes, let us pray that the State Board of Medical Examiners and the County Attorney will do their duty. For some reason Minneapolis has not been very successful in eliminating quacks and quackery, probably for the reason mentioned above, the protection of the unlicensed by evasions of the law by those who are permitted to practice.

THE STATE BOARD OF HEALTH

Judging from the news from underground methods of communication the State Board of Health will have to stand the brunt of criticism for the abolishment of quarantine for smallpox. A small township near Mankato asks the governor to remove the Board, or, if that is not feasible, to call it the State Board of Disease! For a time the people will not grasp the significance of the order, but as soon as they learn that the protection of the public from epidemic diseases is thrown upon county boards of health, they will waken to their responsibilities.

The State Board of Health will not object to

any township or county providing protection to its inhabitants under the direction of the local boards of health, but it will not enforce quarantine for smallpox, because it has been found inefficient, unscientific, and unreliable. Other states have tried the experiment and have succeeded in practically keeping smallpox out of their borders.

The antivaccinationists will foam and roar with rage at the new order because they believe that under former methods they were protected. Now they may be the victims while the man who is vaccinated will be more surely protected.

It will take time to prove or disprove the wisdom of the action of the Board.

The new experiment is worth trying and more people will be converted to vaccination than ever before. It is regrettable that the antivaccinationist is so rabid, but considering the accidents that occasionally befall the vaccinated it is not surprising that here and there are objectors to vaccination. If the total number of persons who die during the process of vaccination from incidental or inherent physical disorders, were placed at the side of other accidental deaths of the state, the totals would be surprisingly small. If the total number of successfully vaccinated were put on the same index the totals would be surprisingly large. What is best for the greatest number would be best for the whole regardless of accidental deaths supposedly due to vaccination.

In the meantime, while smallpox is epidemic, it would be wise to undergo preventive measures, either to keep away from a communicable disease or to be vaccinated and thus keep a clean skin and a healthy body. Grossly exaggerated tales of epidemics in department stores have been freely circulated, all without foundation, and it has been whispered that the so-called scare was promulgated by envy or malice against certain tradesmen.

FOOD VALUES

An Englishman rushing through St. Paul a few days ago found time between trains to leave a menu for the American people. Judging from an interview with a newspaper reporter that eminent Britisher from Manchester is a man of wealth and leisure, for he prescribes five meals a day for his American cousin. His wealth is evident if he can afford to eat five American meals at the present prevailing prices, and his leisure is apparent if he can spend two hours each night at dinner. Here is his regular diet list:

At 7:30 I eat breakfast, usually three or four soft boiled eggs, toast, coffee and some kind of fruit. At 11 I take a light lunch, a sandwich or two, a glass of milk and a light pudding or something of that sort. At 3 o'clock I take another light lunch and at 7 I have my regular dinner, which is my hearty meal of the day. I usually eat heavily at dinner, but I always take a long walk afterward, and at 11 o'clock in the evening drink a cup of tea or two and eat a couple of fried eggs and some toast.

The average American who would eat this amount of food would be something of a gourmand and would not have very much time for business or recreation, unless the latter was his sole occupation.

The critic says the American is nervous, restless, thin and wiry, and has a hungry look, and that his rushing to and through his meals is accountable for his dyspeptic state. There is much truth in this criticism, but it is too far-reaching. The average American compares very favorably with the average Englishman as to his healthfulness, his years of life, and his general activity,* but he is not yet old enough to accept the easy methods and rest periods of other countries. If any one can impress upon the American business man the necessity of taking life less strenuously and paying more attention to the details of life, which mean more comfort and less wear and tear, a great service will be rendered and accepted.

In most walks of life in America the only leisure class at meal time is the workingman. He eats to work and live, and has learned the lesson of abundant and wholesome foods and the pleasure of rest and a pipe. The business and professional classes are the negligent ones. The tempestuous effort to obtain a livelihood, fame, and publicity, is not conducive to right living or eating, hence the criticism of the Englishman is good. The American does not appreciate the benefits of regular hours for work and time to eat, digest and absorb his foods. It has been said that no one should sit at table who is tired, worried, or irritable, yet how many of us eat for the pleasure of it and for the social hour with the family or friends? Perhaps there are many who claim these associations, but, as a matter of fact, the majority of meals are marred by over indulgence, excesses in stimulants, which temporarily banish care, and a depression which is followed by auto-intoxication.

Notwithstanding the hints of the Englishman, his race, as well as ours, would be greatly improved if we could live more simply, eat more simple foods, prepared in a plain and substantial method, and leave our business and cares behind us.

RUMMAGE SALES

This is about the time of the year when cast-off clothing from all sorts and conditions of places and men is gathered together for public

sale for the benefit of some charitable organization. In some places these sales have been prohibited as unsanitary, and dangerous. At Mankato the health officer has ordered the fumigation of all such garments before sales are made, but usually no care is exercised in the handling of these garments, and eventually the second-hand man takes what is left. The only relief is the discouragement of rummage sales by physicians and sanitarians. It is sad enough to know that old clothes are handed down from father to son and from mother to daughter for generations, or, at least, the garment travels from the top to the bottom of the family. One can easily imagine the colonies of bacteria which mingle and propagate their species and toxins as the garment appears from time to time in its downward course. If one needs further information in this line a visit to a rummage sale will be a complete education. Think of the dust from the streets and the slime of secretions that infest the average old garment, and then multiply by six and await the possible result!

It is not feasible to prohibit rummage sales. They can be overcome only by enlightening the public mind. If a rummage sale is inevitable, as it will be, the local health departments can advise fumigation or sterilization by steam. The best method is incineration conducted by one who realizes the consequences and dangers incidental to the handling of filthy goods.

If you feel called upon to give away your old clothes, have them cleaned in the proper manner and have the satisfaction in knowing you have not been the means of spreading a communicable disorder.

REPORTS OF SOCIETIES

MINNESOTA ACADEMY OF MEDICINE

The regular meeting of the Academy of Medicine was held at the Minnesota Club, St. Paul, Wednesday evening, Dec 4th. There were 40 members and 10 guests present. The president, Dr. A. J. Gillette, was in the chair.

On motion of Dr. William Davis all business was deferred, and the Academy proceeded to the consideration of the scientific program immediately after dinner.

Dr. H. J. O'Brien presented a clinical case with sarcoma of the superior maxilla, which he proposed to operate upon the following morning by excision.

The president then introduced Dr. Joel E. Goldthwait, of Boston, the invited guest of the evening, who gave his address upon "Our Present Understanding of the Non-Tuberculous (rheumatic) Joint Conditions."

The subject was discussed by Drs. Dunsmoor,

Cates, Colvin, Moore, Parks Ritchie, Hunter, Nippert, Henderson, and Benjamin, and by several guests. Dr. Goldthwait closed the discussion.

A. W. DUNNING, M. D., Secretary.

MITCHELL (S. D.) DISTRICT SOCIETY

The regular meeting of the Mitchell District Medical Society was held in Mitchell on December 12th. There were twenty-four physicians present, and a very interesting program was given. Dr. R. C. Warne read a paper on "What Can Our Society Accomplish in Business, Educational, Moral, and Social Matters?" This covered not only the ethics of our profession, but advertising in its varied branches, as well. The paper was warmly discussed by a number present, newspaper clippings read, and some personalities entered into, but all in a right and friendly spirit, and it resulted in a better understanding of each other.

This district has the largest membership of any in the state, and the members are working together harmoniously, which is mutually beneficial to all.

Dr. T. B. Smiley read a paper on "The General Practitioner," which was also well received and quite fully discussed.

Resolutions indorsing a five-dollar fee as a minimum for insurance examinations, also condemning the use and indorsement by physicians of nostrums and patent medicines whose contents they do not know, were passed; also recommending that the State Association meetings be held in the fall instead of the spring.

The following officers were elected for 1908: President, Dr. R. C. Warne, Mitchell; vice-president, Dr. E. N. Wagar, Bijou Hills; secretary, Dr. E. F. Reamer, Mitchell; treasurer, Dr. F. W. Freyberg, Mitchell; censor for three years, Dr. Bert Menser, Bridgewater; delegate, Dr. H. B. Schofield, Parkston; alternate, Dr. T. B. Smiley, Mt. Vernon.

E. F. REAMER, M. D., Secretary.

THE WATONWAN SOCIETY

The Watonwan County Society held its annual meeting at Madelia, December 11th, 1907. Officers for the ensuing year were elected as follows: President, Dr. S. Brown, Madelia; vice-president, Dr. A. Thompson, St. James; secretary-treasurer, Dr. B. H. Haynes, St. James; censor for three years, Dr. C. O. Cooley, Madelia; delegate, Dr. J. W. McCarty, Madelia; alternate, Dr. A. Thompson. The committee on post-graduate course, Drs. Thompson and Cooley, reported arrangements perfected to have monthly meetings at the St. Peter Insane Hospital, the clinics

to be conducted by Dr. Tomlinson. Resolutions on proprietary remedies, sent out by Dr. A. T. McCormick, secretary of the State Medical Society of Kentucky, were read and by motion approved. The committee on post-graduate work was instructed to advise Dr. Tomlinson that Jan. 7th would be an acceptable date for the first meeting. Following adjournment the members dined together as guests of the Madelia doctors at the Norman Hotel.

B. H. HAYNES, M. D., Secretary.

HENNEPIN COUNTY SOCIETY

A midmonthly meeting of the Hennepin County Society was held December 16th. The president, Dr. J. E. Moore, occupied the chair, and there were 40 members present.

Dr. Geo. Douglas Head read a paper on "Tuberculin in the Treatment of Tuberculosis," and the same was discussed by Drs. L. A. Nippert, L. W. Day, S. P. Rees, J. W. Bell, and W. H. Au-rand, the discussion being closed by Dr. Head.

The matter of furnishings and fixtures for the new quarters being in order, it was moved that a committee, consisting of the Library Committee and Drs. A. E. Benjamin and A. G. Mann, be authorized to devise ways and means to secure subscriptions in addition to the moneys in the building fund, to have the architects draw sketches of shelving and other required cabinet work, to get estimates on the cost of the same, and to canvass the whole situation as to furnishings, and submit a full report to the Society at its annual meeting. Seconded and carried.

It was moved that a committee of three be appointed by the chair to canvass the matter of a City Physician and to receive applications from the members for the position. They shall at once communicate with the Board of Charities and Correction, and request said board to defer action in matter of selecting a City Physician till after Jan. 6th, the date of the Society's annual meeting, at which time the Committee is instructed to report to the Society. If, however, the Committee finds the election of City Physician cannot be delayed, it shall be its duty to immediately report the same to the president of the Society, who shall at once call a special meeting of the Society to receive the report of said Committee and take such action as seems best. Seconded and carried. The chair appointed as the committee: Dr. W. A. Jones, Dr. R. J. Hill and Dr. R. E. Farr.

A special meeting of the Hennepin County Medical Society was held in the office of Dr. J. E. Moore, December 13th. The meeting was called to order by the president, Dr. J. E. Moore, 15 members being present.

It was moved and seconded that a committee of three be appointed by the chair to secure an

appropriate floral offering for the funeral of Dr. O. E. Linjer, deceased, and to draw up suitable resolutions and memorial to be presented to the Society. Carried. The chair appointed the following members to act on this committee: Dr. R. J. Hill, Dr. J. C. Litzenberg, Dr. C. H. Bradley.

C. H. BRADLEY, M. D., Secretary.

CLAY-BECKER COUNTY SOCIETY

The annual meeting of the Clay-Becker County Society will be held at Moorhead, January 27th, at 6 P. M. E. R. BARTON, M. D., Secretary.

NEWS ITEMS

Dr. E. R. Jellison, of Lindstrom, has moved to Foley.

Dr. J. C. Kettner has moved from Hosmer, S. D., to Aberdeen, S. D.

Dr. R. E. Holbrook, a McGill graduate, has located in Minot, N. D.

Dr. George E. Sherwood has moved from Kimball to Mahanomen.

Dr. F. A. Bordwell, of Calvin, N. D., has moved to Marmouth, in the same state.

Dr. H. O. Schalaben, of Thief River Falls, has received a government position in Alaska.

The Winona General Hospital has received a donation of \$5,000 from Charles Horton of that city.

Dr. C. A. Warner, of Petersburg, N. D., has moved to Wyoming on account of his wife's health.

Dr. Sidney E. Boleyn, of Stillwater, was married last month to Miss Helen Businger of Mattoon, Ill.

Dr. Frank A. Blakeslee, of Bemidji, and Miss Laura T. Dodge, of the same place, were married on Nov. 28th.

Dr. W. C. Emke, of Willow River, was married last month, but no details of the affair have reached this office.

Dr. John J. McGroarty, who has been practicing at Mylo, N. D., is now working in the St. Paul City and County Hospital.

Dr. L. F. Schmauss, formerly of Mankato, will return from Vienna about the 10th, when he will take up his work at Alexandria, Ind.

Dr. George H. Briggs, one of the oldest physicians of the state, died at Albert Lea last month. Dr. Briggs had not been in active practice for some years.

Dr. H. L. Roethe, U. S. pension examiner, has moved from Minneapolis to Detroit, Mich., to accept a position as naturalization examiner.

Dr. John A. Hohf has moved from Gayville, S. D., to Tripp, S. D., taking the practice of Dr. S. Sprecher, who has moved to Mitchell, S. D.

Dr. M. L. Holm, of Lansing, Mich., the son of Dr. P. F. Holm, of Wells, was married last month to Miss Marth H. Kohlhaue, of Wells.

The Superintendent of the Duluth schools has asked the Board of Education to have frequent examinations of the children made by physicians.

The State Board of Medical Examiners of South Dakota will hold a regular meeting at Mitchell, S. D., on January 8th and 9th for the purpose of holding examinations for license to practice medicine in the state.

On December 8th, Dr. L. C. Weeks, of Detroit, made an 80-mile trip by automobile to see a patient. It took six hours to make the run. Has the automobile come to stay?

Dr. Roy Labbitt has given up his position as police surgeon in St. Paul, and taken a place in the City Hospital. John Kelly, a medical student of Hamline, succeeds Dr. Labbitt.

Dr. E. A. Wilkinson, who formerly practiced at Oldham, S. D., was married last month to Miss Louise A. Read, of that village. Dr. Wilkinson is now located at Bisbee, Arizona.

Dr. W. E. Hambroer, of Eden Valley, has purchased a ten-acre tract of land at Vail Lake, near Eden Valley, and will erect a hospital and sanitarium building at that point in the spring.

The St. Paul City Council has before it, and will probably pass, an ordinance to designate certain streets passing hospitals as "hospital streets" and to keep off of them traffic that causes undue noise.

The State Public Health Laboratory at Grand Forks, N. D., began work last summer. In July it had 22 specimens submitted for examination; in November the number of specimens increased to 253, and came from more than 100 physicians.

The Yankton District Society met at Yankton, S. D., on Oct. 20th. The following officers were elected for the current year: President, Dr. F. A. Swezey, Wakonda; secretary and treasurer, Dr. L. T. Beall; delegate, Dr. James Roane, Yankton.

The St. Louis County Medical Society held its annual meeting at Duluth last month. The following were elected officers for 1908: President, Dr. D. D. Murray, Duluth; vice-president, Dr. C. B. Lenont, Virginia; secretary-treasurer, Dr. N. L. Linneman, Duluth.

In our last issue we said Dr. George R. Patton, of Lake City, had retired after practicing thirty-eight years. We should have said thirty-eight years at Lake City, which is in addition to twenty-one years at Cincinnati, Ohio. Dr. Patton retires only because of extreme deafness, he being otherwise in good health.

AUTOMOBILE WANTED

A physician in the country wants a good second-hand car; high-wheeled preferred, but can use low-wheeled. Give description, miles run, equipment, price, etc. Address L. F., care of this office.

HOUSE FOR RENT

14-room house, well adapted for physician's home. Barn has 3 stalls and is large enough for vehicles and automobile. Apply at the house, 1516 2d Ave. South, Minneapolis.

FOR SALE

Being obliged to retire from practice because of poor health, I will sell a high-grade surgical or gynecological chair, made in Indianapolis, and just as good as new. Address Dr. C. E. Lundgren, Harris, Minn. The chair will be shown to any caller, in case of Dr. Lundgren's absence, by C. A. Peterson or Henry Jaechow, of Harris.

FOR SALE

Being obliged to retire from practice because of poor health, I will sell my drug-store and

practice, which pay between \$2,500 and \$3,000 net profit, and can be made to pay much more by an active man. Stock of drugs and fixtures invoice over \$2,000. Will sell at liberal discount for cash. A good location in Southern Minnesota. Address S. D., care of this paper.

FOR SALE

A large compressed-air tank nebulizer and spray attachments. Price, \$50; cost, \$75. Call or write Dr. Samuel Musgrave, Room 204 620½ Nicollet Ave., Minneapolis.

FOR SALE

A good practice, with small drug-store, paying well, in central Minnesota. Population, Scandinavian, German, and American. I will retire. Address N. M., care of this office.

TO THE PROFESSION—X-RAY LABORATORY

I have a well equipped x-ray laboratory, rooms 214-218 American National Bank Building, corner Fifth and Cedar streets, and am prepared to do your radiographic or Roentgen-ray therapeutic work.—W. S. FULLERTON, M. D., St. Paul, Minn.

PHYSICIANS' ATTENTION.—Drug-stores on easy payments, etc. Drug-store positions, United States or Canada. F. V. Kniest, Omaha, Nebr.

DOCTOR: If you want practical post-graduate work during fine season in the delightful city, write for particulars. New Orleans Polyclinic, P. O. Box, 797, Post-Graduate Department, Tulane Medical College.

DEATHS REPORTED TO THE STATE BOARD OF HEALTH OF MINNESOTA FOR THE MONTH OF OCTOBER, 1907 REPORTED FROM STATE INSTITUTIONS FOR MONTH OF OCTOBER, 1907

STATE INSTITUTIONS.

	Total Deaths	Tuberculosis of Lungs	Other Forms of Tuberculosis	Pneumonia	Bronchitis	Diphtheria	Scarlet Fever	Measles	Smallpox	Whooping Cough	Cerebrospinal Meningitis	Typhoid Fever	Diarrheal Dis- eases of Children	Puerperal Septicemia	Cancer
Fergus Falls, Hospital for Insane.....	7	1													
Rochester, Hospital for Insane.....	9		1												
St. Peter, Hospital for Insane.....	6	1													
Anoka, Asylum.....	*														
Hastings, Asylum.....	1			1											
Faribault, School for Deaf.....	*														
Faribault, School for Blind.....	0														
Faribault, School for Feeble Minded.....	0	1													
Owatonna, School for Dependents.....	0														
Stillwater, State Prison.....	0														
St. Cloud, State Reformatory.....	0														
Red Wing, State Training School.....	0														
Minneapolis, Soldiers' Home.....	2	1													
Totals.....	27	4	1	1								2			

REPORTED FROM 72 CITIES HAVING A POPULATION OF 1,000 OR UPWARDS
FOR THE MONTH OF OCTOBER, 1907

CITIES	Population of U. S. Census of 1900	Population of State Census of 1905	Total Deaths	Tuberculosis of Lungs	Other Forms of Tuberculosis	Pneumonia	Bronchitis	Diphtheria	Scarlet Fever	Measles	Smallpox	Whooping Cough	Cerebrospinal Meningitis	Typhoid Fever	Diarrheal Dis- eases of Children	Puerperal Septicemia	Cancer
Albert Lea.....	4,500	5,657	6	2													
Anoka.....	3,769	4,053	6														
Austin.....	5,474	6,489	6	1													2
Barnesville.....	1,326	1,566	1														
Bemidji.....	2,183	3,800	1														
Blue Earth.....	2,900	2,364	2														
Brainerd.....	7,524	8,152	0														
Chaska.....	2,165	2,085	1														
Chatfield.....	1,426	1,300	0														
Cloquet.....	3,074	6,117	1														
Crookston.....	5,359	6,794	5	2													
Detroit.....	2,060	2,149	1														
Duluth.....	52,968	64,942	99	9	5	6		8	2				1	3	4	1	5
E. Grand Forks.....	2,077	2,489	3	1				1									
Ely.....	3,712	4,045	2														
Eveleth.....	2,752	5,332	7	1		2		1						1	1		
Faribault.....	7,868	8,279	5	1										1			
Fairmont.....	3,440	2,955	0														
Fergus Falls.....	6,072	6,692	8	1		1									1		
Granite Falls.....	1,214	1,340	0														
Hastings.....	3,811	3,810	2														
Hutchinson.....	2,495	2,489	0														
Jordan.....	1,270	1,311	1														
Lake City.....	2,744	2,877	2	1													
Litchfield.....	2,280	2,415	2														1
Little Falls.....	5,774	5,856	8	1										1			
Luverne.....	2,223	2,272	1												1		
Le Sueur.....	1,937	1,842	4				1										
Madison.....	1,336	1,604	1					1									
Mankato.....	10,559	10,996	14			1											3
Marshall.....	2,088	2,243	4														
Melrose.....	1,768	2,151	1														
Minneapolis.....	202,718	261,974	217	23	1	23	3	3	1			3	1	9	11		20
Montgomery.....	979	1,281	0														
Montevideo.....	2,146	2,595	5		1	1									1		
Moorhead.....	3,730	4,794	3			1			1								1
Morris.....	1,934	2,003	2														
New Prague.....	1,228	1,419	2														
New Ulm.....	5,403	5,720	4												1		1
Northfield.....	3,210	3,438	8														2
Ortonville.....	1,247	1,612	0														
Owatonna.....	5,561	5,651	6														1
Pipestone.....	2,536	2,885	1														
Red Lake Falls.....	1,885	1,797	0														
Red Wing.....	7,525	8,149	13	2			1								1		2
Redwood Falls.....	1,661	1,806	0														
Renville.....	1,075	1,229	0														
Rochester.....	6,843	7,233	14		1												1
Rushford.....	1,100	1,133	1														
St. Charles.....	1,304	1,238	0														
St. Cloud.....	8,663	9,422	15	2		3		2				1		1			1
St. James.....	2,607	2,320	2					1									
St. Paul.....	163,632	197,323	163	22	5	15	2	4				1	6	9	1	12	
St. Peter.....	4,302	4,514	2														
Sauk Centre.....	2,220	2,463	3														
Shakopee.....	2,046	2,069	0														
Sleepy Eye.....	2,046	2,312	5														1
So. St. Paul.....	2,322	3,458	2														
Stillwater.....	12,318	12,435	6			1									1		
Thief River Falls.....	1,819	3,502	2														
Tower.....	1,366	1,340	1														
Tracy.....	1,911	2,015	0														
Virginia.....	2,962	6,056	1														
Wabasha.....	2,528	2,619	0														
Warren.....	1,276	1,640	0														
Waseca.....	3,103	2,838	1														
Waterville.....	1,260	1,383	2	1													
West St. Paul.....	1,830	2,100	1														
Willmar.....	3,409	4,040	6			1								1	1		
Windom.....	1,944	1,884	0														1
Winona.....	19,714	20,334	22	3		2		1	1			1			1		
Worthington.....	2,386	2,276	3														

*No report received Health officer not doing his duty

REPORTED FROM 65 VILLAGES HAVING A POPULATION OF 1,000 OR UPWARDS
FOR THE MONTH OF OCTOBER, 1907

VILLAGES	Population of U. S. Census of 1900	Population of State Census of 1905	Total Deaths	Tuberculosis of Lungs	Other Forms of Tuberculosis	Pneumonia	Bronchitis	Diphtheria	Scarlet Fever	Measles	Smallpox	Whooping Cough	Cerebrospinal Meningitis	Typhoid Fever	Diarrheal Dis- eases of Children	Puerperal Septicemia	Cancer
Ada.....	1,253	1,515	*	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Adrian.....	1,258	1,184	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aitkin.....	1,719	1,896	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Akeley.....		1,636	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Alexandria.....	2,681	3,051	4	1	0	0	0	0	0	0	0	0	0	0	1	0	0
Appleton.....	1,184	1,321	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Belle Plaine.....	1,121	1,301	*	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Benson.....	1,525	1,766	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Breckenridge.....	1,282	1,850	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Buffalo.....	1,040	1,124	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Caledonia.....	1,175	1,405	*	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Canby.....	1,100	1,505	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cannon Falls.....	1,239	1,460	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cass Lake.....	546	1,062	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chisholm.....		4,231	*	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Dawson.....	962	1,056	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delano.....	967	1,023	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fosston.....	864	1,000	*	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Frazee.....	1,000	1,146	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Glencoe.....	1,780	1,805	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Glenwood.....	1,116	1,718	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Graceville.....	856	1,032	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Rapids.....	1,428	2,055	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Hallock.....	805	1,014	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hibbing.....	2,481	6,566	11	1	0	1	0	0	0	0	0	0	0	0	0	0	0
Jackson.....	1,756	1,776	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Janesville.....	1,254	1,205	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Kasson.....	1,112	1,049	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Kenyon.....	1,202	1,252	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lake Crystal.....	1,215	1,231	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lanesboro.....	1,102	1,041	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Long Prairie.....	1,385	1,256	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Madelia.....	1,272	1,290	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Milaca.....	1,204	1,319	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mountain Lake.....	959	1,063	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
North Mankato.....	939	1,129	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
North St. Paul.....	1,110	1,400	1	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Olivia.....	970	1,019	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Osakis.....	917	1,056	*	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Park Rapids.....	1,313	1,719	*	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pelican Rapids.....	1,033	1,095	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Perham.....	1,182	1,366	*	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pine City.....	993	1,092	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Plainview.....	1,038	1,140	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Preston.....	1,278	1,320	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Princeton.....	1,319	1,704	*	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rush City.....	987	1,041	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Rushford.....	1,062	1,040	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
St. Louis Park.....	1,325	1,491	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sandstone.....	1,189	1,589	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sauk Rapids.....	1,391	1,552	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scanlon.....		1,122	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
South Stillwater.....	1,422	1,572	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Springfield.....	1,511	1,546	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spring Valley.....	1,770	1,573	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Staples.....	1,504	2,163	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Two Harbors.....	3,278	4,402	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wadena.....	1,520	1,868	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wells.....	2,017	1,814	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
West Minneapolis.....	2,250	2,530	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wheaton.....	1,132	1,346	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
White Bear Lake.....	1,288	1,724	*	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Winnebago City.....	1,816	1,553	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Winthrop.....	813	1,031	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Zumbrota.....	1,119	1,129	27	4	1	1	0	0	0	0	0	0	0	2	0	0	0
State Institutions.....			461	39	10	26	1	15	0	0	0	4	3	12	33	1	34
Other parts of State.....	1,012,328	1,085,886															
Total for State.....	1,751,395	1,979,658	1247	120	26	87	8	37	5	1	0	8	8	42	74	3	92

Still births and premature births, 68 (not included in above totals).

*No report received Health officer not doing his duty

OFFICIAL ORGAN OF THE SOUTH DAKOTA STATE MEDICAL ASSOCIATION

THE JOURNAL OF THE MINNESOTA STATE MEDICAL ASSOCIATION AND THE NORTHWESTERN LANCET

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JANUARY 15, 1908

No. 2

SYMPOSIUM ON DISEASE OF THE STOMACH*

THE SURGICAL THERAPEUTICS OF GASTRIC ULCER

By JOHN T. ROGERS, M. D.

ST. PAUL

Much confusion still exists in the minds of the profession as to the proper sphere of surgery in the treatment of ulcer of the stomach. The extravagant statements of many operators in the past five years, has not only added to the existing confusion, but has also been the cause of a vast amount of unnecessary and harmful surgery. The hysterical desire to operate on every conceivable condition of the stomach, has amounted almost to a mania, a craze which can be compared only to that of ovariectomy in the days of Tait. A potent factor in this enthusiasm has been the reports of immediate results in operative work on the stomach, without taking into consideration the possibilities of end-results, too few of which have even yet been published.

From a careful review of an immense amount of literature I am convinced that surgery will occupy a higher plane in the treatment of the condition under consideration than has been accorded it by a majority of internalists.

When does gastric ulcer become surgical? Barker takes the position that when a patient has been rationally treated for those conditions that result in gastric ulcer, and the ulcer has formed in spite of such treatment, the patient should be treated surgically. Furthermore, that

surgery is indicated if an ulcer returns after a medical cure, and also in the presence of pyloric stenosis. (Prog. Med., June, 1907.) "If surgical treatment were more perfect than it is now, he would say that all cases of chronic gastric ulcer, or ulcer appearing during or after middle life, should be turned over to the surgeon, but at present he cannot take that position."

It may be said here that Mayo, Moynihan, Munro, Mayo Robson, and others have demonstrated that ulcer can be treated surgically with less mortality than those treated medically. Moynihan presents an analytical report of 334 cases of operation for non-malignant disease of the stomach with twenty-one fatalities.

These operations were performed for: (1) perforating ulcer, twenty-seven times, with nine fatalities; (2) recurrent hemorrhage, thirty-three times, with six fatalities; (3) hour-glass stomach, twenty-six times, with four fatalities; (4) miscellaneous cases, two hundred and forty-eight times, with two fatalities. The two hundred and forty-eight operations were done on two hundred and thirty-nine patients, and of this number two hundred and twenty-three are quite well, four are no better, ten are classed indifferent, and two have died. In the last one hundred and fifty-one operations of this series there was no death. The operations done were gastro-enterostomy, two hundred and eighteen; pyloroplasty, three; gastroduodenostomy, two; gastropexy, two; secondary operations, nineteen; and one each of gastro-enterostomy and gastropexy, gastro-enterostomy and gastrostomy, infolding of ulcer or excision of ulcer. In this series, there were fourteen cases of gastric tetany, of

*Read before the Minnesota State Medical Association, August 13 and 14, 1907.

varying degrees of severity, from the simplest to the most serious. In all cases, gastro-enterostomy was performed, and every patient recovered. (Abstract Jour. A. M. A.) Mayo reports one hundred and thirty-five operations with one death. Peterson puts the mortality at 3 per cent in the hands of the best surgeons. (Lancet, 1906.)

It must be admitted that these results surpass those of even the most enthusiastic internalists.

Barker says, "Ulcers appearing in the young and generally anemic women, yield to a rational medical treatment in about eighty per cent of cases; the remaining twenty per cent of medical failures are turned over to the surgeon as a last resort, and he is able to cure about one-half of them. In those ulcers which appear during or past middle life, the internalist should try his skill, but will not cure more than twenty-five per cent of them. It is with these patients that surgery has its most brilliant results." (Prog. Med., June, 1907.)

Boucher considers (New York Med. Journal, 1906) the following types of gastric ulcer surgical: (a) Cases of relapsing acute hemorrhage; (b) cases with persistent hemorrhage causing anemia; (c) perforation; (d) recurrent ulcer, pure and simple, attended with dyspepsia and starvation; (e) pyloric obstruction; (f) adhesion following ulcer or independent of it; (g) scar contractions of the body of the stomach, giving the hour-glass condition; (h) some cases of intractable dyspepsia originating in an ulcer and for which the definite pathology is unknown." (Munro.)

It is my belief and practice, except in perforation, progressive anemia, and impending starvation, that we should be slow to advise operation until a most deliberate, careful, and painstaking study of the individual, including oftentimes prolonged treatment, has been practiced.

The best results in gastric ulcer will, in the future, be obtained when the internists and surgeons work together, and work harmoniously for the best interests of the patient.

When not to operate.—From a sad and too frequent experience, almost all surgeons now refuse to operate upon neurasthenics. Acute ulcers do not belong to the surgeon, and should not be operated upon unless some complications demand operation. Alcoholics are notoriously bad subjects. In severe anemia, extreme caution should be practiced. It is from the ranks of the neurotics that so many bad results are seen by the medical men. Operation on this type has caused the severest criticism of the surgeon.

In properly selected cases no operation in surgery has given more brilliant and permanent results than that of gastro-enterostomy.

Until quite recently there has been a great divergence of opinion as to whether anterior or posterior gastro-enterostomy is to be preferred. Now, however, the preponderance of evidence is in favor of the posterior operation.

Following the lead of the Mayos, most American operators are doing the no-loop operation, with results highly satisfactory.

Gastro-enterostomy cures by draining and resting the stomach. In this connection the experiments of Fibich are interesting and important: (1) If the vessels deep in the wall of the stomach of a dog are ligated, and if a portion of the mucous membrane is excised, and if the edges of the wound are cauterized with hydrochloric acid, the resulting ulcer will not heal for a long time; whereas simple wounds of the mucous membrane of the dog heal very rapidly; (2) if a chronic ulcer is produced in the manner above described and gastro-enterostomy is performed, the wound will heal like a simple wound in three days; (3) if the artificial chronic ulcer has existed some time without showing a tendency to heal, it can be made to heal in a few days by the performance of a gastro-enterostomy; (4) the healing action of the gastro-enterostomy is not due solely to the easy escape of the contents of the stomach, since this produced experimentally is not sufficient to heal the ulcer. (Prog. Med., June, 1907.)

Katzenstein believes the favorable results of gastro-enterostomy are due to chemical changes in the stomach, and especially the reduction of hyperacidity. After his operation he gives cream and fats, which combine with the bile and pancreatic juice, which finds its way into the stomach and prevents vomiting.

Finney's pyloroplasty has, in his own hands, given excellent results in a variety of ulcerative conditions not actively involving the pylorus. Other operators have used this method only in those cases where the pylorus is obstructed by the cicatrix of old ulcers, and not too much thickened.

In ulcers at or near the pylorus Rodman makes a plea for the more frequent excision of the so-called ulcer-bearing area, and Mayo thinks this will be done more often in the future on account of the danger of cancer occurring within active ulcers or the scar of old ulcers.

The Murphy button, in my own experience and in that of many others, has been responsible for

failure, both as to operative mortality and end-results. It must be abandoned, with all other mechanical contrivances for making the anastomosis, in favor of the suture operation. Acute perforation of the stomach demands immediate operation. This is universally conceded. Morphine should not be given. It obscures symptoms and delays diagnosis and immediate operation.

With operation the mortality has steadily decreased since 1896, from sixty-five per cent to less than thirty-three per cent at the present time. Early diagnosis and operation will undoubtedly decrease the mortality still more.

The question of excision of the ulcer in this class of cases has been much discussed. It is now the consensus of opinion among the best operators that excision is unnecessary. The best procedure is suture of the perforation and posterior gastro-enterostomy when the patient is in condition. An important factor for success is thorough cleansing of the abdominal cavity and adequate drainage, especial attention being given to the loins and pelvis. The upright position of Fowler should be instituted in all cases.

Hemorrhage as a result of gastric ulcer.—It is in this alarming and often fatal complication that the utmost skill, judgment, and experience of both the clinician and surgeon will be called for. Hemorrhage may take place from the indurated ulcer, the non-indurated ulcer, or from a fissure, almost if not quite microscopical in size, or, as Munro and Moynihan have pointed out, the whole mucous membrane may be weeping blood. Rodman says that "in the large hemorrhage which accompanies acute ulcer of the stomach, surgical intervention is wholly unnecessary." He employs hot water, at a temperature from 120° to 130°, through a stomach-tube. He says, further, "after a second attack of hemorrhage in chronic ulcer, operation should be performed; the stomach should be opened, and direct search made for the bleeding point. If the ulcer can be found, it should be excised, or a partial gastrectomy performed. Next best, is to ligate the mucous membrane en masse, drawing a cone into the stomach. Transfixion of the bleeding surface and ligation have also succeeded. Cauterization is unsafe. Should search for the bleeding point prove futile, the opening in the stomach should be utilized for a gastro-enterostomy." He does not advocate this procedure except as a last resort. (*Prog. Med.*, June, 1907.)

Moynihan, on the other hand, advocates posterior gastro-enterostomy in all cases, and claims

excellent results. In his book, "Abdominal Operations," page 134, he says: "In cases of hemorrhage, therefore, I advocated the performance of gastro-enterostomy as the safest, speediest, and surest method of checking the outpouring of blood." My own practice has justified my advocacy of this method. In no case have I found reason to regret having adopted it. In all, the arrest of the hemorrhage has been complete and permanent. This has not been the experience of other equally capable operators. I believe the safest course is to make a not too prolonged search for the bleeding point, ligate or excise and perform gastro-enterostomy.

It is obvious that in this condition, as in that of perforation, the patient is already in a state of more or less profound shock, and consequently an operation should be as rapid as is consistent with safety and thoroughness, and that we should use every effort to prevent further shock while operating.

In dealing with hour-glass contractions and adhesions interfering with the muscular action of the stomach, the condition found in the individual case must be our guide as to what operation is necessary for their relief.

(For discussion see page 30)

DIAGNOSIS OF ORGANIC DISEASES OF THE STOMACH

By T. W. STUMM, M. D.

ST. PAUL

When one sees a patient complaining of stomach trouble, the first and one of the most important things to consider, is, What is the nature of the underlying condition? The field is a large one, and so many things are to be considered that it is best to first try to put the case into one of three general groups: (1) There may be nothing abnormal about the stomach at all, but the complaints are referred to this region owing to a pathologic condition in some other organ; (2) there may be numerous complaints referable to the stomach due to a neurosis; (3) and, lastly, the trouble may be due to a disease of this organ itself.

Before drawing conclusions or attempting to diagnose any case, a good and careful history should always be elicited, and in the diagnosis of diseases of the stomach this bears as much, and often much more, weight than in some other

conditions. To secure a good history requires much time, and the more one is experienced in history-taking the more valuable it should be.

Not infrequently in cases where the symptoms are referred to the stomach one can elicit in the history that which will at once draw his attention to some other organ. How frequently we see people complain of a discomfort in the epigastrium when the underlying cause is a slight break in the compensation of the heart. Here we are apt to get a history of a former attack of rheumatism or some other acute infection, often with shortness of breath and possibly even a history of edema. Yet to the patient the discomfort occasioned by the passive congestion of the liver is ascribed to some disease of the stomach, and this organ is held responsible for an entirely foreign condition.

Digitalis and rest will cure many complaints referred to the stomach.

Some pathologic condition in the gall-bladder will often occasion symptoms referable to the stomach, and in some cases much skill and care are needed to make the differential diagnosis. When we think that probably half the cases of gall-stones do not produce jaundice and that many of them never cause crampy pain, but only a discomfort in the epigastrium, it is easy to see why the stomach is thought to be the offending organ; yet here a careful history, bringing out the fact that the discomfort or pain is nearly always a constant one, and is not associated with the quantity and quality of food ingested, will be of material aid in the diagnosis. The pathologic condition is often not limited to the gall-bladder, but is located in the liver itself. Cirrhosis of the liver is only second to gastric ulcer in the production of gastric hemorrhage. This should always be borne in mind, for we are so apt to consider a gastric hemorrhage positive evidence of a gastric ulcer that I have no doubt many times some other condition is accountable for the hemorrhage than ulcer of the stomach. Varicose veins in the esophagus, passive congestion due to a heart condition, blood that has been swallowed, hemophilic condition, etc., should all be thought of and excluded before the stomach condition is decided upon.

Chronic appendicitis is a condition which will frequently give symptoms leading one away from the true cause of the trouble. These symptoms are oftentimes located in the upper part of the abdomen and not uncommonly in the epigastrium. In such cases the stomach is often blamed, and various forms of treatment are directed to it.

Some conditions of the kidneys cause reflex pain located in the upper part of the abdomen. This may be seen occasionally in kidney-stone or any other condition that will plug a ureter, a toxic condition from incompetency, or an abnormal position of the kidney, such as a floating or tilting kidney.

A diaphragmatic pleurisy not infrequently causes a referred pain that is located in the epigastrium. Tuberculous meningitis, locomotor ataxia, Meniere's disease, many intoxications, angina pectoris, arteriosclerosis of the splanchnic vessels,—all cause symptoms which may be referred to the stomach, but which we cannot discuss here owing to our limited time. We have enumerated enough, though, to show that because the *apparent* trouble is in the stomach we cannot assume it to be there until all these, and many other, conditions are excluded by the history and findings, and then something positive about the stomach made out by which we can locate the trouble there.

As difficult, however, as it may be in some cases to exclude other organs than the stomach itself, this is usually much easier than to exclude a functional or neurotic condition of the stomach. Albu says of all the stomach cases he sees at least 75 per cent of them are functional. We will all admit that this is an enormously high figure, but I am sure any one who is constantly studying diseases of the stomach is often astonished at the great number which he is forced to classify as functional, and this, too, after having exhausted all his known means to place them in some other class. Unfortunately, though, I fear, owing to the large functional class, one may be inclined to put in this class cases which, by a more thorough examination and a longer observance, he could put into the organic group. This neurotic condition may be, and in many cases is, only a part of a general neurotic condition, while in other cases the sole complaint is of the stomach. The nervous manifestations may show themselves in so many ways that one must be on the outlook to find them as sensory, motor, or secretory changes. Again, it must be remembered that there may be ever so marked a neurosis, but that this may have developed on some grave organic basis, or the condition may be just the opposite. But whatever form be taken by the neurosis, the one thing above all others which is of value in the diagnosis in the largest percentage of cases, is a careful history. These patients will nearly always convict themselves if one will only lend an attentive ear to

the history and properly interpret it. Boas has well divided these cases into monosymptomatic and polysymptomatic. In the first there is one single thing which is the cause of all the annoyance, while in the latter the symptoms may be manifold.

There are certain landmarks which guide us in eliciting the histories from such people, for we dare not ask them a leading question; if we do, the mere mentioning of a condition may present it to their minds, and it will become another one of their fixed complaints. To ask leading questions in any case is a bad practice, and one must be constantly on the watch to keep from it in neuroses.

We can, though, learn from such people that the character of their complaints does not stand in a direct relation to certain rather fixed rules which one can apply in diseases of the stomach. For instance, the character of the food seldom has an influence on the intensity of the complaint in a neurotic. The pain may be ever so annoying, yet a glass of milk or a cup of tea is as badly borne as a heavy dinner, and they will say in some cases that they are able to retain heavy foods, but cannot bear the light ones. The inconstancy of the complaint is also of great importance. They seldom have a complaint which is present from day to day or week to week. It is fitful: one day they are in a terrible condition, or in the forenoon the condition may be almost unbearable, while in a few hours, or something less, they are feeling perfectly well again; or the condition may come on periodically at fixed or irregular periods. I recall one woman who has been complaining of her stomach for years. In the beginning she complained only on Sundays about 2 P. M. after she had come from church and eaten her dinner; then the condition got worse, and she would also have some trouble on Monday. When I saw her the complaints had become more general, but this was an "earmark" to be brought out in her history, and when taken with other things about the case it furnished a strong link in the chain.

These complaints, in whatever way they show themselves, usually come on *immediately* after eating. Not infrequently the last mouthful is hardly swallowed before the trouble has begun. This is not an invariable rule, but one which when present often bears weight in a diagnosis. Such is not the case in organic conditions, for there is no organic condition of which I know where the trouble begins immediately after the food is ingested.

Many neurotics will vomit within five or ten minutes after eating. This may be only at one meal a day; it may be the same one, or it may change from meal to meal, or it may come on at longer intervals and irregularly. A strong, healthy-looking young woman said to me the other day: "I have no stomach complaint except now and then, once a month probably, after having eaten a good dinner and enjoyed it, I can scarcely wait to get up stairs to empty it out again." This she has learned to expect and looks for it from time to time.

The secretory functions, too, may bear the same irregularities as the symptoms complained of by the patient. The acidity after a test-breakfast one day may be practically nil while the pepsin and rennet will be normal; another day there may be a high acidity with the same amount of pepsin and rennet. It is a fact that the pepsin and rennet scarcely ever vary in a neurosis, however much change there may be in the acidity. This fact often aids us materially. By giving the patient two or more test-meals and estimating the acid and ferments in each we can easily learn if there is a change in the acid secretion with a constant amount of the ferments. There are, however, nervous secretory anomalies which do not show this great fluctuation. This may show itself as a constant or nearly constant hyperchlorhydria in one case, and an acidity in another.

We thus see that the largest percentage of patients referring their symptoms to their stomachs are not in reality suffering from an organic stomach condition *per se*. There are, however, after all these are excluded, a large number in the aggregate who are suffering from an organic condition which we can usually diagnose with a fair degree of certainty. In many of these the complaints are such, if carefully elicited, that a conclusion can be reached almost from the history alone. In practically all organic diseases of the stomach, except gastritis, pain is present in varying degrees. In ulcer this is the chief complaint; it may be of all grades, only a burning or sticking, but often sharp and crampy, coming on in paroxysms, not immediately after eating as in the neurotic, but at the height of digestion or when there has been more acid secreted than the food can combine with.

Only rarely do we find an ulcer located in the cardiac end of the stomach, but when we do, we expect the pain to occur earlier than when the lesion is in the pyloric region or in the duodenum. In the first case it may occur as early as

twenty minutes after eating; if in the pyloric region it is later, half an hour to an hour or more; and if just beyond the pylorus in the duodenum it is still later, probably four hours after eating. These patients will usually tell us they suffer *real pain* and not a discomfort. In many cases this is in a small local area just below the ensiform, and when asked to locate it the exact spot will be pointed out, and we are informed that it is always in the same place. Not infrequently it will radiate straight through to the back, and one will be able to locate about the tenth dorsal vertebra, a small tender area just in the median line and not to the right as often seen in gall-stones. (Boas.)

The quantity and quality of food ingested nearly always bear a direct relation to the pain experienced. Liquids and soft foods are well borne when taken in small amounts, but full meals and heavy food increase the complaints.

Vomiting is a symptom of importance in the diagnosis of organic stomach conditions. If with a history of local pain in the epigastrium, coming on in paroxysms after eating heavy food and increasing in severity, a patient tells us that he is accustomed to vomit, after which he is relieved, we at once suspect an ulcer. The character of the vomitus, too, is of importance. If it consists of well-digested food, tasting sour and bitter to the patient, the process is apt to be an acute one in which the digestive powers of the stomach are yet good. When the vomiting occurs only now and then and is greater in quantity it has a different meaning to us; especially is this true if we are told, or see, that particles of food taken a day or two previously have been retained. In such a case we know positively that we are dealing with a stagnation process. This nearly always means that we have a pyloric obstruction. This obstruction may be inside the lumen (seldom), in the wall itself or an obstruction from the outside, but in either case, if we can say that we have an obstruction to deal with, considerable is gained toward a diagnosis of the condition. In many cases the obstruction is due to the contraction of an old ulcer scar, producing a stenosis more or less complete. In this case the stagnated contents sometimes reach enormous proportions, one or two quarts or even more. We then know that the stomach-wall has suffered and that the stomach is dilated, for in the early stages of an obstruction the musculature of the stomach hypertrophies, and an effort is made to force the contents onward. Only

after continued efforts does the musculature become weak enough to allow dilatation.

If the obstruction is benign the contents usually contain free HCl; if a malignant process is present they may or may not show a free acidity due to HCl. Unfortunately, but little can be determined in the early stages of a malignant condition from the character of the vomitus or aspirated contents. If the condition has progressed far enough to produce stenosis, and ulceration is present causing the characteristic coffee-ground vomitus, then we can well assume that we are dealing with a malignant condition, but when so far progressed as this we are doing very little for our patient to diagnose his condition as a far-advanced carcinoma, only to inform his friends or relatives that we can do nothing for him, for at this stage an operation will do no good unless there is a stagnation, and then operative procedures are only palliative, making him more comfortable by draining the organ.

The analysis of the stomach-contents secured from a test-breakfast or meal often furnishes us considerable information relative to the integrity of the stomach-functions. This should be done in practically all cases, whether they are acute or chronic, barring contraindications to the passage of the tube. Recently Sahli has inaugurated a new procedure to avoid the annoyance of the tube to the patient. This is his desmoid reaction and consists in having the patient swallow a little gutta-percha bag containing K I or methylene-blue, the bag being tied with a catgut ligature. He claims that the ligature will be digested in the stomach if HCl is present, and the K I can be detected in the saliva or the methylene-blue in the urine. Einhorn has employed a string, on to which various small articles of food are fastened, some to test the stomach digestion and others the intestinal. Neither of these has met with a very wide-spread approval.

The test-breakfast or meal secured with the stomach-tube still remains our most reliable guide to detect the digestive power of the stomach. Sometimes we can gain much information in this way; in other cases there is but little to be gained. The simpler the ingested food the better in most cases. The breakfast adopted by Boas some years ago, or some slight modification of it, still holds with the greatest number of clinicians. This consists of 35 gm. of stale white bread and 400 cc. of water, taken fasting, or, if there is the slightest suspicion of stagnation, after the stomach has been thoroughly washed out. This should be recovered in an hour. One

can usually recover about 150 cc. If there is increased motility a smaller amount will be secured or even none. If motility is decreased or if a hypersecretion is present, a larger amount will be secured, even as much as, or more than, was ingested.

Inspection of these contents will show at a glance whether digestion is poor, fair, or good. They should normally be whitish, finely divided, and evenly mixed, and have an acid odor, but not disagreeable. If mucus is present in small clumps, which one can detect as the contents are poured from one glass to another, we know at once that a gastritis is present. In some cases the mucus may be much, in others little. The long, stringy mucus has no significance, since this comes from the pharynx. The reaction should always be taken. I usually employ Congo paper for this. If a blue color is secured one knows at once that free HCl is present, and if this color is present to any degree there is no need to look for organic acids, lactic acid being the one of most importance. The organic acids will not develop if there is more than a trace of free HCl. One learns to estimate to a considerable degree of accuracy the free acidity by the Congo paper, but it is best to make an accurate estimation of the free and total acidity after filtering a little of the contents. Both the free and total acidity can be estimated in the same glass, using dimethyl-amido-azo-benzol as an indicator for the free, and phenolphthalein for the total, acidity, neutralizing with a decinormal NaOH solution. Normally a free acidity of 20 to 25 and a total of 40, and never over 50, should be secured in a test-breakfast of 35 gm. bread and 400 cc. of water, secured at the end of one hour. It is not necessary clinically to estimate the combined acidity.

If in the contents we find only a fair degree of digestion, some mucus present, and a high acidity, we can at once say we have hyperacid gastritis, if a small amount of acid, a subacid and if none at all, an anacid gastritis. There is no other way to make a diagnosis of a chronic gastritis than by the presence of mucus and the acidity. According to the amount of acid present the form of gastritis is designated. Chronic gastritis is a rather infrequent condition, and one is surprised to see how few cases he will record gastritis when this simple procedure is resorted to. The procedure is simple, and it requires surprisingly little time to secure a test-breakfast, observe it, make an estimate of the acidity, and look at it under the microscope. For

the latter, a small amount of the residue is placed on a cover-glass and a drop of diluted Lugol's solution (iodine, K I and water) added. This colors the starch granules purplish, and the other things that may be present are nearly all stained brown. In normal contents we will see a great many starch granules, a few fat drops, and a few scattering yeast cells, though not in a state of division. We also often see the nuclei of some leucocytes, the outer protoplasmic part having been digested away. These have been swallowed.

If the motor power is poor, one will secure a varying amount of contents from the fasting stomach, the amount depending on the degree of insufficiency. Here one will see the stagnated food that may have been taken some hours or even days before. Budding yeast or sarcinae are often found in such contents. The acidity here may be due to either HCl or to organic acids. The presence of lactic acid or Oppler-Boas bacilli has about the same significance. Either of them means stagnation. It is a clinical fact, though, that if the lactic acid bacillus is present in any quantity, say 100 to a field, it practically always means that carcinoma is the cause of the obstruction. (Schmidt.) The lactic acid bacillus does not stain with Lugol's solution, but can be readily recognized as a thin rod-shaped organism, which is usually Gram-positive from the contents and always so from culture. (Schmidt.) The only other organism which one would confound with it, is the "mouth bacillus," which is larger, has more blunt ends, and is Gram-negative.

The presence or absence of blood should always be noted, which can be done, even in minute traces, by the aloin, guaiac, or benzidin test. Many times blood will be found in the stools when none is noted in the stomach-contents. Its presence speaks much for an ulcerative condition, which may, or may not, be malignant.

The presence of certain protozoa, which has been noted in some early cases of carcinoma, is not so far recognized as of great diagnostic significance in the early diagnosis of malignant conditions, though some clinicians have claimed considerable for it.

Saloman has devised a procedure for the estimation of the albumin and nitrogen in the fasting stomach which has received considerable attention in the last three years, and is considered by some as having a diagnostic value. It is known, though, that an ulcer will occasionally, at least, show the same findings; therefore it cannot be

said to bear a strong differential diagnostic value in these two conditions.

Aldor claims considerable for the presence of albumose in the urine as a diagnostic aid in carcinoma of the gastro-intestinal tract. Ury and Lilienthal have looked for it in a rather large series of cases and think it has some value. They found it in about two-thirds of their carcinoma cases.

When one has the tube in the stomach to siphon out the contents it is a good plan to make it a rule to carefully inflate the stomach by means of a rubber bulb. This is better than inflation with gas produced with sodium bicarbonate and tartaric acid, as it leaves the distension entirely under the control of the operator. In this way one can gain a better idea of the size and location than by the physical examination in palpation and percussion.

The physical examination is of great value and should always precede the chemical, but in some cases there is little gained by it compared to the information gained through other means.

While it is impossible in a paper of this length to discuss thoroughly all the means at our command in the diagnosis of organic diseases of the stomach, I think we have, at least in a cursory way, outlined enough so that we may say, much is to be made out positively, and other things, while not positive, may aid us materially in reaching a conclusion regarding stomach conditions.

DISCUSSIONS OF THE TWO PRECEDING PAPERS

DR. G. G. EITEL (Minneapolis): I am very much pleased with the most excellent papers on gastric diseases read this morning by Drs. Stumm and Rogers. I am especially pleased to notice the trend of conservatism expressed by the gentlemen.

Every reasonable means should be used in making a diagnosis in gastric cases before making an abdominal section. In most cases the patient should first have the benefit of dietetic treatment, proper rest, suitable food, and fresh air, before surgical procedures are undertaken. But after all this has been thoroughly tried, and failed, as it certainly will in about 20 per cent of the cases of gastric ulcer, an abdominal section should be made in such a way that the stomach and surrounding structures can be properly examined by palpation and inspection, and then there should be done whatever may be indicated,—very likely a gastro-jejunoscopy, which may be posterior or anterior, preferably the former, and without a loop; or an excision of an ulcer, with or without a gastro-enterostomy; or a pylorotomy. As a rule, a gastrojejunoscopy well performed will answer most indications. In cases of pyloric stenosis, of course, the sooner the proper operation is done the better.

I am not an adherent of the idea of excising a gastric ulcer in order to prevent carcinoma; for, if the patient

is going to have carcinoma of the stomach, it is my opinion that he is just as apt to develop one in the scar left after the operation.

Acute hemorrhages at times may require prompt surgical aid, namely, ligating the bleeding artery, but thus far my experience coincides with that of Dr. Rogers in that the patients who had simply a gastro-enterostomy performed some days after the hemorrhage, without ligating the artery from which the blood came, did as well as could be desired.

Acute perforation must, of course, be promptly dealt with, in order to give the patient the best possible chances for recovery.

Carcinoma of the stomach has had a great deal of attention during the last ten years, and there is scarcely a surgeon in this country who has any ability whatever who has not resected, or even excised, the stomach; and, after all, what for? Mainly to see if he could perform this wonderful operation successfully. Now, we all know that it is not the most difficult thing in surgery to do these operations and get the patient out of the hospital, but let me ask "how much good will it do the patient?" That should be the main question. In my opinion, when a patient comes to the surgeon with a carcinoma of the stomach that can be made out by palpation, the best thing to do, as a rule, is to send him home; for, whenever the growth can be made out as mentioned, the surrounding lymphatic tissues are also so much involved that the patient will not be benefited by a resection or gastrectomy.

But even though fewer cases of gastric ulcer be operated on in the future than in the past, and though there be not so many operations made in cases of carcinoma of the stomach, gastric surgery, nevertheless, has come to stay.

DR. G. C. BARTON (Minneapolis): There is no doubt at all but that certain conditions of the stomach are relieved only by surgical means. The making of the diagnosis, however, as to what cases are surgical and what are medical, is not always an easy proposition. This is well illustrated by the following case: About a year and a half ago I saw, with my assistant, Dr. Sivertsen, Mrs. J., who had passed through the hands of some thirty-five physicians and surgeons, good, bad, and indifferent, and had steadily grown worse and become more emaciated. It was believed she had carcinoma of the stomach, and I have no doubt that modern methods were used in making the diagnosis. The question was whether anything would do her any good; she was reduced in weight to seventy-eight pounds. She had had an operation, a pyloroplasty, a few years before without any benefit, and as a result of this operation she had a ventral hernia. After a careful study of the case we decided it a case of ulcer, and at the solicitation of Dr. Sivertsen we decided to do a gastro-enterostomy. On opening the abdomen we found the pyloric end of the stomach surrounded by adhesions, which were probably the results of the former operation. After freeing these adhesions and bringing up the stomach it looked normal in size and general appearance. There was no stenosis at the pyloric. I did as quickly as possible an anterior gastro-enterostomy, using a Murphy button. She made a good recovery, and in eight months from the time of the operation, she had doubled in weight and had fully recovered. This was a case where the prognosis was so bad that other

men who had seen her thought it impossible to do a gastro-enterostomy, and yet by that operation her life was saved.

In acute perforating ulcer of the stomach, nature sometimes takes care of the condition, at other times the patient very promptly dies unless operated on immediately, and in still another class of cases the stomach-contents may escape and become encysted afterwards, this forming an abscess. This is illustrated by the following case: Mrs. M. was taken suddenly with severe pain apparently in the region of the gall-bladder. My friend, Dr. McDougald, was called and believed from all the symptoms that it was a case of gall-stone colic, as she gave no history of ever having had any trouble with her stomach. She soon began to run a temperature. It was very difficult to feel anything through a thick, rigid, abdominal wall, she being a very fleshy woman, but the doctor was sure he could feel a mass in the epigastric region a little to the left of the median line, which I then could also feel. I believed we had a perforated ulcer of the stomach, and advised operation. We opened the abdomen and found some stomach-contents, which had been encapsulated and suppuration was beginning. We removed this and found that nature had closed the perforation in the stomach, so this was not molested. The drain, which was put in the abscess cavity, was allowed to remain for three days, when it was removed. The woman made an elegant recovery.

Another class of cases are those who suffer sudden and severe hemorrhages from the stomach, and in many instances I believe these are best treated by hygienic and medical means. I remember a case of this kind that I saw some fifteen or sixteen years ago. A healthy young German girl was suddenly taken with severe hemorrhage from the stomach. I am sure I have never seen such an extensive hemorrhage as she had, and she had bled, the family said, equally as much the day before. Acetate of lead and opium seemed to stop the bleeding. I urged absolute rest of the stomach, but on the second day after the hemorrhage the mother informed me her daughter must have something to eat, and that she had given her a glass of beer, some sauer kraut, and other things of like nature to eat. It gave her no trouble. She improved right along and has never had any trouble with her stomach since, although some fifteen or sixteen years have elapsed. In her case it seemed as though nature had done her work well under adverse circumstances.

DR. C. H. MAYO (Rochester): This subject is a most interesting one, and I wish to especially compliment the writer on the surgical treatment and his excellent way of handling that topic.

In regard to the question of diagnosis: personally, I would place a good history of the case as related by the patient himself first; second, I would test the stomach with a stomach-tube, and usually a course is decided upon by the retention of food and the history, with the laboratory report, and, last, I would apply a laparotomy. As some of these patients describe their symptoms to us, just as we are getting on the track of their history, we find that the trouble is due to a neurasthenic condition, and in those cases one should be slow in making a diagnosis. It is much better in that class of individuals to spend some time before operation in making a diagnosis than in spending time after the operation in answering letters from them.

A question that has been receiving a good deal of attention the last year or two is the reflex sympathetic nervous system. We have long known how a pregnant woman can die of her stomach troubles without stomach disease. We know of some cases where there are indications of a pyloric trouble, and when we have made a diagnosis we advise the patient to have an operation done. When we make a partial exploration we find an accumulation of gas, and this big stomach evidently needs drainage; it is so dilated that it needs emptying. There is no ulcer found, the pyloric ring is strong, and we find nothing wrong, except the size. These cases belong to the neurasthenic type, and it does not mean but what they have some direct sympathetic disturbance through the sympathetic nervous system. If there is something else wrong in the abdomen the action of the nervous system would carry its effect through to the sluice-gate of the stomach. It may be the gall-bladder, it may be the appendix, but it may all come through the sympathetic nervous system. A powerful agitation will sometimes call forth a disturbance of the stomach and cause vomiting. Sometimes one of the most manifest symptoms of appendicitis is through the stomach. So in many of these cases a gastro-enterostomy may do the individual harm.

DR. A. M. WANG (Minneapolis): As a general practitioner this discussion of diseases of the stomach, both from the medical and the surgical standpoint, is interesting to me. With regard to the diagnostic symptoms of stomach disorders, I would like to hear the essayist state more of his experience in diagnosing the condition found in the stomach with the x-ray. I have understood that much could be ascertained with the x-ray after administering bismuth subnitrate.

In America, where we are all well aware of the American dyspepsia—almost an American disease—I believe neuroses are more prevalent than in Europe. The fact that so many are cured, or at least relieved, after going the rounds of many physicians, by suggestive therapeutics, is proof of a neurosis.

With regard to surgical treatment, I believe that, although it may be a dangerous suggestion to throw out broadcast, the patient should have the benefit of early surgical interference. We all know that in the case of cancer unless the patient has the early care of the surgeon, valuable time is lost. The difficulty we find in making diagnosis would seem to justify early surgical interference simply as an exploratory measure.

DR. JOHN T. ROGERS (Essayist): I have little to say in closing the discussion, except that I think it can be safely said that the general trend of both physicians and surgeons is to conservatism as to operative procedure in these cases. However, it must be remembered, as has been said, that a large percentage of these long-standing cases of chronic ulcer die of tuberculosis. I believe it was Michaels who called attention to this fact, so that it behooves the internalist in the treatment of his cases to remember that he must not prolong his treatment on that account, and also because many of them have carcinoma develop on the face of the old ulcer. When I said those cases should be treated by an internalist for a sufficient length of time, I did not mean the treatment that is ordinarily given for ordinary ulcer by the average practitioner, but I meant intelligent and rational treatment by rest, treatment that is only efficient in the hands of the man who has

his patient under absolute control. The ordinary treatment of the patient returning to his home is neither rational nor intelligent. These patients must be under absolute control, either at the hospital or under the care of a trained nurse.

In regard to exploring laparotomies, I am opposed to exploration except as a last resort. I believe with the methods at our hands exploratory surgery is unnecessary in the majority of cases, and I believe we should be careful in advising the operation generally to explore these cases, and unless we have definite conditions indicating operation we should be slow in operating.

In regard to the posterior or anterior operation: there are certain cases which demand the anterior operation, such as perforation or chronic perigastritis with dense adhesions. The Murphy button, in my experience, has been a failure and should be discarded, except in those rare cases where a suture operation cannot be performed.

DR. T. W. STUMM (Essayist): Just a word here in regard to the hydrochloric-acid secretion. Hydrochloric acid may be present in the stomach under a great many conditions, but I cannot concur in the theory that the absence of hydrochloric acid in the stomach brings on an atony with stagnation. It is not at all uncommon to find an increased motility in a stomach with an absence of hydrochloric acid. In some of these cases when a test-meal has been given one will secure only 20 or 33 cc. or, it may be, nothing at all, at the end of one hour instead of 150 cc., as is the case in a normal stomach. If we have stagnation in the stomach we nearly always find that we have an obstruction as the cause of it. If this obstruction is due to a scar or adhesions the stomach makes an extra effort to rid itself of its contents, and it is only after prolonged effort, as time goes on, that we get a dilatation and stagnation with fermentation in the retained contents. Such contents may or may not contain hydrochloric acid, but at any rate the absence of the hydrochloric acid is not the cause of the dilatation and atony.

It is surprising to see how many people have more or less mal-position of their stomachs, and yet they do not suffer from it. The motor power is good, and if they are given a full meal at the end of seven hours the stomach will be empty. Occasionally in cases where we have a low position of the stomach there will be an atony, and stagnation will follow. If there is marked ptosis there may be a kinking at the junction of the duodenum and pylorus, the so-called "fish-hook stomach," and in this way the food is hindered from passing on into the intestine as it should do. After the patient has been in this condition for a long time he becomes thin and anemic, and once in a *long time* a stagnation will be seen. This, however, is the exception rather than the rule, for ptosis usually in no way hinders the food from passing onward.

In our paper we said that sometimes pathological conditions in the gall-bladder or appendix or some other organ caused symptoms that were referable to the stomach. These symptoms are referred through the nervous system, but these are not the cases of so-called "neuroses of the stomach." After we exclude all cases with stomach symptoms due to a pathological condition in some other organ, and all organic diseases of the stomach *per se*, we still have by far the largest

percentage of patients complaining of stomach trouble. These we must classify as neuroses, or functional stomach conditions. These occur in so many different forms that we must keep a sharp lookout to be sure that we are dealing with a neurosis. It is often very hard to say that this case is one of neurosis and this is one of an organic condition. Time here is an important factor. It is many times impossible to say on the first examination after securing a history and thoroughly examining the patient whether he is suffering from an organic or a functional condition. But by waiting a few days, or weeks, and carefully studying the case, we are able to convince ourselves if there is an organic condition present or if we are dealing with a neurosis.

I am sure any one who has studied diseases of the stomach carefully will agree with me that the percentage requiring surgical interference is small. During the last two or three years we have come to a better understanding as to stomach conditions requiring an operation. There are some stomach conditions that are greatly benefited by surgery, but, as was said in the discussion, to operate on a neurosis not only does no good, but does actual harm. With our present understanding of gastric ulcer most of the cases should be put in the non-operative group, while properly selected cases can be materially helped by operation. In the past there has been much operating for gastric ulcer, but by studying these cases we have learned that only a part of them have been benefited. If there is a stagnation due to scar-formation or adhesions a gastro-enterostomy will relieve the condition in many cases; but he who expects results from such a surgical procedure in simple ulcer will be disappointed. There may be temporary improvement after the operation because most of the food was withheld for a time, and the patient was kept quiet in bed. Much experimental work has been done recently showing the course of the ingested foods when no pyloric obstruction is present. Cannon and others have noted that unless the pylorus is obstructed the gastro-enterostomy opening is not used, hence in uncomplicated ulcer cases we cannot expect a cure by making an opening through which the food will not pass.

INFLUENZA OF THE NOSE, THROAT AND LARYNX

W. Sohler Bryant, of New York, describes the course of influenza and the complications involving the nose, throat, and larynx. Pressure in the nose causes reflex symptoms in the higher centers of the cortex and brain. The ostia of the various sinuses are closed, and catarrhal inflammation of those cavities may ensue. The frontal and maxillary sinuses cause frontal and facial pain and tenderness. When the ethmoidal and sphenoidal sinuses are involved there is extreme intranasal tenderness and discharge, with pain deep in the head. In the pharynx tonsillar inflammation and abscess may occur. The larynx when involved, shows its inflammation by irritating cough and pain. Prognosis for recovery is good. Treatment is abortive, local, and general. Abortive treatment consists of the application of astringents, preferably silver nitrate to the mucous membranes. Irrigation with saline solutions and peroxide of hydrogen are useful when there is pus. Sinus complications may be helped by hot irrigations of the nasal cavities.—Medical Record.

AUTO-INTOXICATION AS A FACTOR IN DISEASE*

By W. J. MAYTUM, M. D.

ALEXANDRIA, S. D.

Auto-intoxication is a subject that is new to a great many in the medical profession, and cannot be found in many of the later text-books, nevertheless it is a subject that is of very great importance. I believe it has an influence in almost all, if not all, diseases.

Auto-intoxication, as the name implies, is a poisoning of the body by toxins produced in the individual. The manifestations are so many and varied that close application to the study is necessary to its understanding. So long as all the functions of the body are performed properly, no danger is manifested, but let what is termed an ordinary cold occur, and, if in a child, we may have a picture something like this: We are called to see a child who is stupid, pulse rapid, breathing also rapid with a catch or moan at each breath, some tympanites, bowels constipated, tongue coated usually, a spasm may usher in the symptoms, vomiting occurs, but not always, there are a few râles in the lungs, in fact, we are apt to suspect a case of pneumonia. But should we make such a diagnosis, we should be surprised to find that the lung symptoms would subside by the next day and the abdominal symptoms would predominate, and, unless laxatives had been given early, constipation would continue up to the second or third day, when green mucous stools, small in quantity, make their appearance, followed in a short time by others tinged with blood, but very little fecal matter; in short, it is a true dysenteric condition, but due to auto-intoxication with impaction, which is often mistaken for appendicitis. We have pain in the region of the appendix, but with care we will note a difference: the paroxysms are farther apart; the pain is more sickening, radiating up the side and back; the pulse is slower and the temperature not so high. It may come on with vomiting and diarrhea. There may be a tumor near the appendix due to hardened feces, making the diagnosis more complex. I have had a number of cases of this trouble that I am certain some physicians would have diagnosed appendicitis, but by giving them a number of doses of

opiates to rest the bowel for a few days and then flushing them out well with saline laxatives and castor oil, with high rectal injections of glycerine, epsom salts, and water, they recovered, after copious evacuation.

It is a surprise to see the quantity of fecal matter that will pass these patients, sometimes after weeks of impaction. I wish to say here, in connection with impaction, that hypodermic injection of morphine, to keep the bowels quiet for a few days, is the best means to relieve this condition, as the bowels will often move without physic after this. Most of these cases are in persons advanced in life, but not all, for I have seen a number of cases in young children. Another thing that is strange in impaction is that they usually say the bowels are moving too much and that they have a diarrhea, but upon investigation we find there are a number of watery stools but not much solid matter. Another point I wish you to note here is that the odor from these impacted feces that have been retained for months is not nearly so putrid as the case of the child I mentioned first, who was apparently well the day before the attack began, but whose fecal discharge was simply putrid, showing that nature fortifies herself against this condition, as the solid dry feces are not readily absorbed, while the liquid feces are, thus causing the more acute symptoms.

In cases of impaction we may find patients who have this condition for months, with few symptoms, occasionally some headache and what are called bilious attacks, the bowels moving every day, thin watery stools, but not satisfactory. In this condition the fecal matter accumulates on the walls of the colon, usually at the beginning of the ascending colon or in the sigmoid flexure. As I have said before, we do not have as much auto-intoxication from impaction as we would suppose, because, in order to have absorption, we must have a liquid on each side of the absorbing membrane capable of wetting it to favor osmosis.

In these cases of impaction opium is the remedy. In the cases that simulate appendicitis there is not much absorption, but the symptoms

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are mostly mechanical. When this fecal matter begins to irritate or congests the mucous membrane, nature makes an extra effort to throw it off, and then the pains are sometimes very severe. If opium is given now until the muscles are completely relaxed and kept in this condition for a few days, the muscles regain their tone and start the mass to moving. In impaction we often have acute obstruction due to a mass becoming detached and becoming lodged in a narrow passage below, when vomiting begins and there are pain and great distension of the abdomen with absence of fecal movements. These cases are usually relieved by laxatives and enemas, if it is the first attack, but they are prone to recur, and I have seen death result after two or three attacks, due simply to obstruction and exhaustion. Auto-intoxication may be due to a derangement of nutrition or to ingestion of too much food in general, or too much of certain ingredients above what the system can digest or assimilate.

There is no one toxine found in all cases, but one that is found is indol. Indol, which results from the putrefaction of albumin, is one of the toxins always present, and it is poisonous, but it is not the only toxine which causes the trouble. It is eliminated by the kidneys as indican. Perchloride of iron added to urine of auto-intoxication produces a deep-wine color, but this also occurs in a number of diseases, such as scarlet fever, septicemia, etc. We generally find an acid odor to the breath, which is due to acetic fermentation. There are poisons enough created in the body to kill four or five men daily if elimination were not so perfect. The liver alone creates enough to kill three men. Bilirubin is one of the most active of this group, but as soon as the bile is emptied into the duodenum it is precipitated as an insoluble compound if the individual is in health; if not, these poisons are found along the entire intestinal tract. If from overeating or from some indigestible food these processes in the intestines are interfered with the bile is not at once rendered insoluble and is absorbed and again carried to the liver, which, after a time, is irritated and its cells fail to perform their function, and some bile is allowed to escape directly into the blood, but even yet it does not act as a direct poison, for the connective tissue, epithelial cells, and nerve sheaths begin to absorb it and prevent its injuring the more delicate structures. Then if the kidneys are active (a very fortunate thing) they are capable of

eliminating the toxins for a time, but there soon comes a time when they fail.

There is another matter for consideration here. As long as the secretions are normal and the alkalinity of the blood is perfect, the nervous forces work in harmony. It has been demonstrated that the nucleus of a living cell is electropositive and the envelope is electronegative. It is also the same with the nerves: the axis-cylinder is acid and the envelope is alkaline. When death occurs these conditions at once neutralize. When toxins develop in the blood these conditions change, and we have nervous symptoms, such as hysteria, melancholia, urticaria, etc. Who has not seen a case of urticaria develop after the ingestion of some food which did not become assimilated? There are also cases that simulate apoplexy. A patient after the ingestion of a hearty meal suddenly becomes comatose, talks incoherently, the respirations are stertorous, the pulse slow, vomiting frequent, there is involuntary passage of urine and sometimes feces, but no symptoms of paralysis; pupils regular, and sensation normal. These conditions last for twenty-four to forty-eight hours, and the patient recovers, or if kidneys and liver are not in proper condition to eliminate these toxins, fever gradually begins, the pulse gets rapid, the pupils become somewhat dilated, and the patient again lapses into a lethargic condition, and death ensues.

Toxins have as much to do in the causation of disease as bacteria, and probably more. I believe the system must be weakened from these toxins before the bacteria are able to enter. In health the phagocytes are capable of devouring all germs deleterious to the body; but with toxins floating in the blood it is different. These toxins act on the cells of the liver and interfere with their action and thus hinder the formation of the red corpuscles of the blood. Toxins not eliminated by the liver are thrown upon the kidneys, causing overwork for them. It is in this condition that bacteria gain the advantage over the phagocytes, and such diseases as pneumonia, nephritis, gastro-enteritis, and duodenal catarrh develop.

We see cases every day where children after ingesting coarse foods, such as orange peels, etc., will have a temperature of 104° come on in three hours with vomiting and convulsions. The next day the patient will be nearly well—thanks to a good liver and kidneys. Nearly all cases of melancholia and neurasthenia are forms of auto-toxemia.

We also have aphthous sore mouth of children and erythema of the buttocks from an acid diarrhea. In acid fermentation we have diarrhea with an accumulation of sulphuretted hydrogen, which is a poison capable of being absorbed into the system, and from it we have the smell of rotten eggs and the symptoms of acid poisoning. The symptoms are many and varied. As to treatment, elimination is the secret. Stop all food and use saline laxatives and intestinal antiseptics with charcoal to absorb the gases. Of the antiseptics, iodoform is one of the best. Naphthalene is good, and sulphocarbolate of zinc is highly

recommended, but I have not found it to be what it is recommended. I have found the best treatment to be the restriction of food. If in much pain and if I think impaction has anything to do with it, I give a good hypodermic of morphine and atropine; then after giving the tired muscles time to rest, I give castor oil or saline laxatives with high enemata and strychnia to tone up the run-down condition. Hydrochloric acid is one of the best remedies to stop the putrefactive changes that are prone to develop. Dioscorein is good in duodenal catarrh.

THE INDICATIONS AND TECHNIC OF THE HYPEREMIA WORK OF PROF. BIER*

BY J. H. BEATY, M. D.

ST. CLOUD, MINN.

In speaking of Prof. Bier's work in hyperemia I shall say some things that will bring to your mind the thought, "I have done that many times;" and this is true. Hyperemia work is not new, nor is the exciting of the organism against disease processes by some irritant new, but it was for Prof. Bier to systematize and explain the theory and to work out the details of technic; and these he has done and has placed this treatment before the profession, and so it is he that should have the honor of having his name coupled with it.

If I may be allowed to indulge in a little prophecy, I will prophesy that this will be an honor conferred upon him only temporarily, as this work must enlarge and expand to fields not touched by Bier's work, and some day it will be re-named, or else it will gradually become a part of ordinary rational treatment that will require no name at all.

WHAT IS THE THEORY OF PROF. BIER?

Nature always meets irritation with the same weapon, namely, hyperemia. This is readily seen either by scratching a sterile skin with a sterile needle or by infecting any organism with any irritating or poisonous germ, or, most commonly of all, by the reaction of the part when a small splinter is lodged in the skin. The object is to increase the blood-supply to the affected or the

infected part and by so doing to increase the supply of leucocytes, and by this means either to destroy the infective germs or, by an increase of serum, to dilute the poison till harmless, or to wash away the débris of infection.

This is nature's way, and the intelligent physician is always on the lookout for a chance to aid nature in nature's way.

Dr. Hollister of Chicago has done some experimenting on the effect of artificial hyperemia upon the local opsonic index. He finds, in case of local infection, that the local opsonic index is always not only below normal but below that of the general circulation, low as that may be; but a test after hyperemia has been produced shows the index raised nearly to that of the general circulation, proving that we get not only a hyperleucocytosis but also a hyperopsonization.

By artificially producing hyperemia we do not disturb the general organism at all, and we accomplish in a few minutes what nature unaided might require hours or days to do or, in a weakened or overpoisoned condition, might not be able to do at all; namely, the production of a hyperemia and the bringing to bear upon the infected area all the forces that nature has at her command, and we not only concentrate the reaction, the attack, against the irritant, but we hold our forces on the field of action long enough to do the work required of them.

By means of artificial hyperemia we can often

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abort an infective process and save the breaking down of tissue, or, if at the beginning of treatment the process has gone on to the breaking down of tissues, the hyperemic method assists in quickening the process of expulsion of the products of infection and also the process of repair.

Thus we claim for it—

1. Prevention of infection when germs are actually present.
2. Prevention of breakdown when infection is started.
3. Limiting of breakdown when breakdown is started.
4. Hastening of expulsion of débris.
5. Hastening of repair after débris is thrown off.

So this treatment returns the patient to his duties with a minimum amount of loss of function or tissue and in the quickest possible time.

Now for the treatment itself. Hyperemia may be either active or passive.

Active hyperemia is produced by a dilatation of the blood-vessels of the part, and may be produced either by suction or hot air.

Passive hyperemia is produced by a delay of the return circulation, and may be produced by either suction or constriction of the part proximal to the part treated.

You will notice that I include suction under both kinds, and that suction produces a mixture of active and passive hyperemia.

I shall take up these three methods of producing hyperemia separately, and with each outline as nearly as I can Bier's technic and indications.

First. Hyperemia by constriction. This form of hyperemia is produced in ordinary cases and when the part is easily accessible, as in case of the hand, by applying, proximal to the affected part, a bandage of India rubber. This bandage should be about $2\frac{1}{2}$ inches wide and from $1\frac{1}{2}$ to $2\frac{1}{2}$ yards long, according to the size of the limb, and should be applied evenly over quite a wide area entirely clear of the affected part and only tight enough to produce slowly a redness of the part. *There should be no pain* and no coldness of the part. If the pain increases when the bandage is applied or if the part becomes blue or cold, it is too tight, and we are producing a stasis. If the site of the bandage pains it is too narrow or else the skin should first be protected by a flannel bandage.

In the case of a shoulder a piece of rubber tubing is used as follows: Pass a strip of gauze loosely around the neck and tie it; then pass a rubber tube under the arm encircling the shoulder and through the gauze collar; put this on the stretch and clamp it. Now pass a bandage under this in front and behind, passing it around the body and draw tight enough so that it brings the constriction around the shoulder and not the arm.

In producing hyperemia of the head an elastic-web collar is used. This is armed at one end with a hook, and the other end is supplied with several eyes. This is adjusted tight enough to redden the face, but, like all others, must not produce or increase pain.

Indications.—Hyperemia by constriction is used in acute and chronic infections of parts where it can be applied. It may be used alone when the infection is general or in conjunction with the suction when the infection is localized and has been treated by incision.

In acute cases the bandage should be worn from twenty to twenty-two hours a day, and, if the case is properly chosen and the bandage properly applied, it will relieve rather than increase pain.

In chronic cases, such as tubercular joints, it should be applied from one to four hours daily and sometimes twice a day.

During the application of the bandage the limb should assume a ruddy (not a blue) color, and there should be marked edema, and usually, during this time, the general temperature decreases. These symptoms should become less, or perhaps disappear, during the interval, and during this interval the limb may be elevated to assist in this resorption. You must not be surprised if the temperature increases during the interval.

If pus has formed, do not wait, but evacuate at once, but use short incisions and apply suction, as I shall describe later.

Hyperemia by suction is produced by evacuating the air under a cup or in an air-tight chamber in which the diseased part is placed. This is ordinarily done by glass cups shaped to fit the part, and the air is exhausted by means of a rubber bulb in the case of a small cup, and by a suction air-pump in case of a large one.

The indications for the use of suction-cups are acute localized infections where pus has formed early, to limit and localize the infection, and, later, when an incision has been made, to evacuate the pus and to stimulate healing.

In applying the cups to an acute abscess, apply just comfortably tight for five minutes on and three minutes off, making the treatment last forty minutes. You will find this most useful in mastitis and ferunculosis, healing the trouble quickly and destroying a minimum amount of tissue.

Larger suction apparatus are also used enveloping a knee or a foot or a hand. The indications for these are the same as in the smaller apparatus except that they are useful in chronic joint disease, but usually the constriction will do all the work.

Another form of hyperemia that Professor Bier uses and which is better known in this country than the others, is "*hot air*."

Bier uses the hot air in chambers in which the affected part is inclosed, and with the hot-air douche, which is made by a fan similar to a blacksmith's blower, run by electric or other power, and the blast directed by a nozzle made of cloth stretched over a spiral spring. The air is heated by a four-barreled Bunsen burner placed in the intake of the blower.

Hot air produces a red, active hyperemia, and is useful in chronic rheumatism or its effects, in arthritis crepitans, in hydrops of joints, and in recent fractures and sprains. In these the chambers are used. The heat is applied one-half hour daily, and the temperature is as high as can be comfortably borne, usually from 175 degrees Fahrenheit to 300 degrees Fahrenheit.

Do not use hot air in acute infections.

The hot-air douche is used to promote the resorption of adhesions, infiltrations, or scar tissues, and is applied five times daily to the part affected. It is also useful in neuralgias.

RECAPITULATION

Hyperemia should be used early, and, if pus is present, in conjunction with incisions.

In acute cases it should be used twenty-two hours daily, and in chronic cases one to four hours daily.

No apparatus for hyperemia should produce or increase pain.

Success depends upon proper differentiation and proper technic.

RESULTS

In acute cases the infection may be aborted; if not, its course can be shortened and the damage limited.

In acute sprains it is a great help.

In chronic cases in general, with patience, it will do more than any other treatment.

In tubercular joints, use the hyperemia patiently. Do not fix the joint nor allow pressure or traumatism, and the result, in from six to fifteen months, will be a movable, useful joint, even if there is limited bony breakdown.

If cold abscesses form, use incisions and cups, but do not pack.

In tubercular cases, the patient or his friends can be taught to apply the treatment at home to avoid the bad effects of hospital life.

SURGICAL SUGGESTIONS

Always make small incisions.

If treating an infected tendon be careful not to cut the annular ligaments.

Do not pack a joint-cavity or a tendon-sheath, as the presence of a drain, especially of gauze, encourages the breaking down of the tissues and the formation of adhesions.

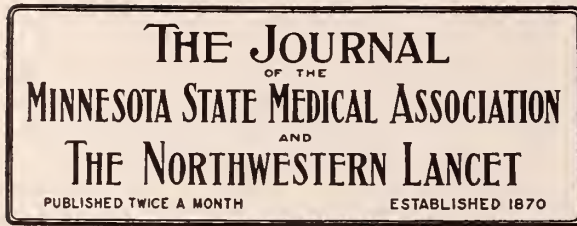
As a prophylactic measure hyperemia should be used early in wounds or bruises, especially if the skin is broken.

After accidents where a foot or a hand is crushed or where there is a compound fracture the resources of nature may be concentrated upon the injured part by means of hyperemia, and much loss of tissue and even of limb or life may be avoided.

Finally, and most important, is to make Bier's own technic the basis of our work. He has worked it out against all the difficulties of conservatism, opposition, and ignorance; and what he has got he has got right. Outside of his work it is for us to further investigate and further perfect this work, and many bloody operations will be avoided, many modified, and the usefulness of limbs and even the limbs themselves will be saved, and humanity will be better and happier because Bier and his followers have lived.

SOME UNCLASSIFIED DANGERS IN ANESTHESIA

Joseph D. Bryant, of New York, extols the value of trained anesthetists that are thoroughly conversant with the effects of anesthetics and with the simpler as well as the more elaborate arrangements for the giving of these drugs. The physiology of anesthesia should be well understood. The dose must vary with the conditions. Not all the anesthetic used has been absorbed; some is in the lungs and some is dissipated in the patient's expiration. Fertility of resource and knowledge of the remedies to be used in various contingencies are necessary.—Medical Record, December 28, 1907.



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LA GRIPPE AND ITS FOLLOWERS

A wave of La Grippe has rushed over the United States, leaving a chain of sequelæ that range in seriousness from pneumonia, with its attendant dangers, to an irritable throat, with its annoying barking coughs.

With a widespread epidemic of this kind the physician is never without a diagnosis, no matter how severe or trifling the illness may be. La Grippe is no respecter of persons, medical men, laymen of all classes, and even the sick-proof Christian Scientist join the numerous throng of aching, coughing, and sneezing victims. The man who has an ordinary cold receives but scant attention; the majority prefer the more euphonious classification of La Grippe. The epidemic is always a serious one because of the irregularity and uncertainty of the onset and termination.

In many of the sufferers the beginning is mild, like a coryza. Gradually and insidiously the irritable throat or the bronchial symptoms present themselves, as evidenced by the exhaustion, the aching body, and the racking cough, with elevation of temperature and pulse. In the majority of cases these symp-

toms subside by degrees. The minority have pneumonia or exhibit an exacerbation of some latent kidney, heart, or pulmonary disease that otherwise would have remained quiescent. Undoubtedly, the most serious complications of an epidemic of La Grippe are the pneumonias and the sudden appearance of unexpected organic diseases that are brought to light by rapid inroads of an acute infectious fever. The after-results of La Grippe are frequently far-reaching, and in many instances the patient is left permanently crippled.

Some one has suggested that La Grippe is an infectious fever that expends its force and virulence on the nervous system. This would explain the condition of many of the chronic invalids who complain and exhibit nervous symptoms for years afterwards. It is quite true that in all of these nervous people there is a predisposition to nervous breakdown, which would not occur except for the presence of some acute infection. Any other epidemic would be followed by similar results, but the communicability of La Grippe is so extensive that a larger number of people are afflicted than from other epidemiform disease.

We may smile at the seemingly loose and easy diagnosis of La Grippe, but it is well to be on the safe side and protect the immediate sufferer and prevent, if possible, the spread of the infection to other members of a household. Isolation is beneficial and sensible, but it is difficult of accomplishment. Prevention by such measures as are necessary to insure warmth of body, cleanliness of throat and nose, and activity of the eliminatory avenues, is imperative. Sudden changes of temperature, particularly during an open winter or in unseasonable weather, are responsible for many cases where ordinary precautionary means would have prevented an attack.

The popular and rational treatment during an attack is stimulation by strychnine, caffeine, quinine, alcohol, and heat. The old-fashioned sweating method of treatment, if it is carefully conducted, is a first aid, but the patient should be directed to remain indoors for a day or two thereafter, if possible, while the stimulants are in use. Phenecitine and salol are frequently employed with success to relieve pains and to dissipate abnormal temperatures, but, after all, the essential features in the treatment of La Grippe are rest, elimination, stimulation, and time.

THE PROFESSIONAL ANESTHETIST

The attention of the medical profession has frequently been called to the necessity of providing a trained anesthetist for all surgical work done in hospitals.

Further attention has been directed to this subject by an inquest on a patient who died in Guy's Hospital, London, to whom chloroform was administered by a house-surgeon in a case of exophthalmic goiter, preparatory for operation by Mr. Symonds.

At the inquest it was shown that the house-surgeon had administered anesthetics between forty and fifty times under the superintendence of the hospital anesthetists, had attended four lectures on the administration of anesthetics, and, during his term of service, had given anesthetics ninety-eight times. The woman who died under the anesthetic had a thyroid gland which weighed seven ounces, a thymus gland weighing over three ounces, and also a fatty heart. No special blame could be placed on the anesthetist under the circumstances. Mr. Symonds very generously shared in the responsibility, although it was generally conceded that the anesthetist should assume all responsibility.

The jury returned a verdict of "death from misadventure, due to the administration of chloroform"; but, at the suggestion of the coroner, they added a rider "that in all operative cases of a serious nature anesthetics should be administered either by a staff anesthetist or by a resident under his immediate supervision," and that "complete statistical tables as to anesthetics should be kept by the authorities of Guy's Hospital."

Although the number of deaths due directly to anesthetics is comparatively small, undoubtedly a considerable number of deaths are indirectly due to the use of chloroform and ether.

There are many latent or slumbering diseases that are aroused to great activity by the administration of any anesthetic. Probably foremost is unrecognized kidney inadequacy. It is surprising to find that the surgeon is often willing to operate when kidney insufficiency is evident by ordinary means of analysis. The risk has so often been assumed that the majority of cases are not given the careful consideration that is due them. It is true that in most emergency work not sufficient time can be devoted to investigation, but

there is no excuse for full investigation of the proposed or observed cases.

If a trained and skilled anesthetist is employed to assist the surgeon, he should be given a complete history of the patient, together with all of the laboratory findings, in order that he may decide upon the character and method of the anesthetic to be administered. He should then be considered responsible for his part of the work. If this ideal—and in some hospitals it is practiced—could be carried out, the accidental or indirect deaths from anesthesia would be reduced to the minimum.

When we survey the field of surgery and the seemingly reckless indifference practiced all over the country, it is amazing that more deaths are not reported from anesthetics. Suppression of facts and the unscientific and irresponsible causes given for deaths are additional reasons for the unreliability of statistics in general.

A plea for more instruction in the use of anesthetics and the training of skilled administrators for all hospitals should be one of the aims of the medical profession.

THE DOCTORS' UNION

The physicians in Charles City, Iowa, are facing an interesting problem. Several medical men have been indicted on the charge of attempting to fix, regulate, and maintain prices. The case will be carried to the supreme court to determine whether the antitrust laws have been broken.

The whole thing came from the adoption of a fee-bill by a medical society and an agreement between the members to maintain a certain standard of fees. Of course, some one objected and in all probability some physician dared to charge less than a brother practitioner. It is utterly impossible to create a fee-bill that is unobjectionable. If, as in most instances, the bill is an elastic one, it has sufficient elasticity to cover all cases, particularly when an abdominal operation is scheduled to bring from one hundred to one thousand dollars. Of course, there are many laboring people who cannot afford to pay even the minimum fees for a surgical operation and the other necessary expenses which are inseparable from them, hence the surgeon usually takes what he can get or what the patient can afford. Physicians and surgeons usually charge what they consider their services worth, and if the majority of charges were analyzed and put into statistical form, the fees would be unexpectedly low. A majority of the profession charge well, and some

of them charge more than is morally right, but the average medical man is underpaid.

A fee-bill may be of some use as a moral support to the weak and vacillating, but when put to the test by legal processes it is found deficient. The only safe rule to follow is to make the charges to fit the case and its responsibilities. A man who knowingly accepts a patient with an incurable disease and promises relief or cure, and who detains his patient until his funds, in hand and borrowed, are exhausted, is no better than a robber. The physician or surgeon who gives an honest opinion and who gives his best efforts in the care of the patient, with no dishonest promises, should be paid for his work. It is well to have an agreement, oral or written, between patient and doctor. Both should have a clear understanding of what the circumstances are, the character of the service to be performed, and what might reasonably be expected. It should also be understood that doctors are not infallible, that mistakes in diagnosis may occur, but the main facts should be plainly in view. The doctor is to do the best he can, and the patient is to meet his obligations, great or small, according to his abilities and his worth.

A business agreement is always a good thing, and if physicians were more business-like, patients would hold them in greater regard.

There are occasional instances where true expert service on the part of the physician is rendered to a patient of wealth. The charge should accord with the responsibilities in the case. The same service may be given to the poor, and either a moderate charge or no fee at all should be exacted. It is reprehensible for a physician to give his services for nothing and to feel that it is an opportunity to advertise his skill. Too much of this work is done in the profession of medicine. There is also much underhanded work that cannot be too strongly condemned.

Frank, open, and honest business principles would make the fee-bill unnecessary.

NEWS ITEMS

Dr. George E. Peterson, a recent Hamline graduate, has located at Murdock.

Dr. A. E. McMillan has moved from Tower to Chicago.

Dr. George H. Ogle, of Arlington, S. D., has moved to Nunda, in the same state.

Dr. Jennette McLaren has been attending clinics at the New Orleans Policlinic.

Dr. A. J. Lewis, of Mora, has fitted up a part of his residence for use as a hospital.

Dr. J. Turnbull has moved from Karlsbad to McIntosh.

Dr. P. H. Munger, of St. Paul, has located at Buffalo Lake.

Dr. E. A. Riley has moved from Willow River to Moose Lake.

Dr. R. P. Pearsall, of the Lenont Hospital, of Virginia, will locate on the Pacific coast.

Dr. Max Kern, of St. Cloud, has gone to Vienna for an extended course of post-graduate work.

Dr. S. C. Rodda has moved from Washburn, N. D., to Maremath, N. D., a new town on the Milwaukee line.

Dr. F. E. Boyden has leased the interest of his partner, Dr. B. T. Green, in the Brookings (S. D.) Hospital.

Dr. David A. Kirk, of LeSueur, was stricken with paralysis last month, and left in a very serious condition.

Dr. Einar Onsum, of Devil's Lake, N. D., was married last month to Miss Marion May, of Waukon, Iowa.

Dr. A. M. Giffin, of Rapid City, S. D., has been appointed a district surgeon for the Northwestern R. R.

The State Sanatorium for Consumptives at Walker is open for patients. The charge for patients is \$7.00 a week.

Dr. G. P. Aylen, of Sheldon, N. D., has been appointed surgeon-in-chief of the N. P. Hospital at Billings, Montana.

Dr. W. H. Smith, of Oklahoma, has been appointed physician to the Indians at Cass Lake, succeeding Dr. Rodwell.

Dr. John Pearson, of Two Harbors, died last month at the age of 63. He had practiced over ten years at Two Harbors.

Dr. D. K. Thyng (State University, '96), of Willow City, N. D., has gone to Europe, and will spend a year in study and travel.

The Ogilvie Sentinel says a physician is very much needed in that place, claiming that the opening for a physician is a good one.

Dr. Charles B. Stone has become associated with Dr. Robert Turnbull in the management of the Fosston Hospital, at Fosston.

Dr. F. J. King, of St. Thomas, N. D., sailed for Europe on Jan. 4th, to be gone a year. He will study at the various medical centers.

Dr. Arnold Schwyzer, of St. Paul, has received his commission as Swiss consul for Minnesota, the Dakotas, Wyoming, and Montana.

Dr. John D. Brooks, for several years connected with the government post at Ft. Meade, S. D., has received an appointment at Panama.

Dr. Nicholas Senn, of Chicago, is dead at the age of 64. Dr. Senn was born in Switzerland, and came to this country when nine years of age.

Dr. Charles E. Bigelow (State University, '04), of Madison Lake, was married on Christmas day to Miss M. Olive Morrison, of Manakato.

Dr. T. R. Rucker, of Mott, N. D., has established a hospital in a commodious residence building, and will have competent nurses in charge.

The State Board of Health of South Dakota has abolished quarantine for smallpox, thus taking the same position as that of the Minnesota Board.

Dr. Leo Chilton will take charge of his father's practice at Howard Lake, while the latter is absent in the South, where he goes for his health.

Drs. C. R. Sanborn and V. E. Verne have located in Parker's Prairie, and have purchased the hospital formerly conducted by the late Dr. Quitmeyer.

Dr. Robert A. Campbell, of Minneapolis, announces that he will hereafter confine his practice exclusively to diseases of the nose, throat, ear, and eye.

Dr. Willis H. Pratt, city physician of Stillwater, resigned last month in order to go South for his wife's health. Dr. J. H. Haines was elected his successor.

The laboratory to be conducted by the Cass County Association at Fargo, N. D., has been opened, most of the apparatus and material having been received.

Dr. Michael Bockman, of Thief River Falls, was married last month to Miss Florence Elizabeth Brazie, daughter of Dr. H. W. Brazie, of Minneapolis.

Drs. Haagensen and Busch, of Hillsboro, N. D., are making extensive repairs on the Hillsboro Hospital building, and will hereafter have sole charge of the same.

Dr. C. B. Teisburg has moved from Ashby to Pine City where he has work in the Pokegama Sanatorium, conducted by Dr. H. Longstreet Taylor, of St. Paul.

Dr. D. M. Strang, of Northfield, was married on New Year's day to Miss Marian L. Gleason, of Owatonna. Dr. Strang is a 1907 graduate of the State University.

The Ryder Hospital of Oakes, N. D., has passed into the hands of Drs. Ryder and Brastad, of that place, and hereafter it will be known as the Samaritan Hospital.

Dr. James D. Barrett, of Wichita, Kan., has formed a partnership with Dr. R. I. Hubert, of St. Cloud. Dr. Hubert will soon leave for the East to do post-graduate work.

Drs. Smyth and Chambers, of Bismarck, N. D., have dissolved partnership. Dr. Chambers will hereafter confine his practice to diseases of the eye, ear, nose, and throat.

Dr. John F. Fulton, who has been devoting most of his time during the past six months to the eye clinics of Philadelphia and New York, has returned to St. Paul and resumed practice.

Dr. S. Sprecher, who has just moved from Tripp, S. D., to Mitchell, S. D., will take a post-graduate course in New York, and upon his return will establish a hospital at Mitchell.

Drs. C. G. Weston, O. S. Chapman, and J. C. F. Ely, of Minneapolis, have been elected honorary members of the National Anti-Race Suicide Bureau, recently formed in Cincinnati.

The Western Surgical and Gynecological Association will meet in Minneapolis in December of this year. It met last month in St. Louis. Dr. A. T. Mann, of Minneapolis, was re-elected secretary-treasurer of the Association.

Governor Johnson has reappointed the various physicians whose terms of office expired at the end of 1907 on state boards, as follows: Board of Health, Drs. Hunt, McGaughey, and Graham; Board of Medical Examiners, Drs. Lowe, Knights, and Margaret Koch; Sanatorium for Consumptives, Dr. H. L. Taylor.

The Yankton District Society of South Dakota met at Yankton, S. D., in December. Clinical cases were presented by several physicians and fully discussed. The election of officers resulted as follows: President, Dr. F. A. Sweezy, Wakonda; secretary-treasurer, Dr. L. T. Beall, Irene; delegate, Dr. James Roane, Yankton.

At the annual meeting of the Watertown District Society of South Dakota, held last month, the following officers were elected: President, Dr. L. G. Hill, Watertown; vice-president, Dr. H. W. Sherwood, Doland; secretary-treasurer, Dr. J. B. Vaughn, Castlewood; delegate, Dr. R. F. Campbell, Watertown. A banquet followed.

AUTOMOBILE WANTED

A physician in the country wants a good second-hand car; high-wheeled preferred, but can use low-wheeled. Give description, miles run, equipment, price, etc. Address Dr. W. P. Lee, Fairfax, Minn.

FOR SALE

Being obliged to retire from practice because of poor health, I will sell a high-grade surgical or gynecological chair, made in Indianapolis, and just as good as new. Address Dr. C. E. Lundgren, Harris, Minn. The chair will be shown to any caller, in case of Dr. Lundgren's absence, by C. A. Peterson or Henry Jaechow, of Harris.

FOR SALE

Being obliged to retire from practice because of poor health, I will sell my drug-store and

practice, which pay between \$2,500 and \$3,000 net profit, and can be made to pay much more by an active man. Stock of drugs and fixtures invoice over \$2,000. Will sell at liberal discount for cash. A good location in Southern Minnesota. Address S. D., care of this paper.

OFFICE POSITION WANTED

A trained and experienced nurse desires a position in a physician's office for clinical work or as office nurse. Position in a large western city preferred. Best of references. Address R. M., care of this office.

PRACTICE FOR SALE

Good country practice in village of 600 inhabitants near Chisago Lake (not far from the Twin Cities). Population 600; mostly Scandinavians. Office has been used by physicians for 22 years; rent cheap. Address T. L., care of this office.

PHYSICIANS' ATTENTION.—Drug-stores on easy payments, etc. Drug-store positions, United States or Canada. F. V. Kniest, Omaha, Nebr.

DOCTOR: If you want practical post-graduate work during fine season in the delightful city, write for particulars. New Orleans Polyclinic, P. O. Box, 797, Post-Graduate Department, Tulane Medical College.

DEATHS REPORTED TO THE STATE BOARD OF HEALTH OF MINNESOTA FOR THE MONTH OF NOVEMBER 1907,

REPORTED FROM STATE INSTITUTIONS FOR MONTH OF NOVEMBER, 1907

STATE INSTITUTIONS.	Total Deaths	Tuberculosis of Lungs	Other Forms of Tuberculosis	Pneumonia	Bronchitis	Diphtheria	Scarlet Fever	Measles	Smallpox	Whooping Cough	Cerebrospinal Meningitis	Typhoid Fever	Diarrheal Diseases of Children	Puerperal	Septicemia	Cancer
Fergus Falls, Hospital for Insane.....	13	4	..	3	..	..	..	..	..	..	..	..	..	..	..	..
Rochester, Hospital for Insane.....	10	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
St. Peter, Hospital for Insane.....	3	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..
Anoka, Asylum.....	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Hastings, Asylum.....	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Faribault, School for Deaf.....	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Faribault, School for Blind.....	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Faribault, School for Feeble Minded.....	0	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Owatonna, School for Dependents.....	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Stillwater, State Prison.....	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
St. Cloud, State Reformatory.....	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Red Wing, State Training School.....	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Minneapolis, Soldiers' Home.....	7	..	1	1	..	..	..	..	..	..	..	..	..	..	..	1
Totals.....	34	6	1	4	..	..	..	..	..	..	..	..	..	..	..	1

REPORTED FROM 72 CITIES HAVING A POPULATION OF 1,000 OR UPWARDS
FOR THE MONTH OF NOVEMBER, 1907

CITIES	Population of U. S. Census of 1900	Population of State Census of 1905	Total Deaths	Tuberculosis of Lungs	Other Forms of Tuberculosis	Pneumonia	Bronchitis	Diphtheria	Scarlet Fever	Measles	Smallpox	Whooping Cough	Cerebrospinal Meningitis	Typhoid Fever	Diarrheal Dis- eases of Child- ren	Puerperal Septicemia	Cancer
Albert Lea.....	4,500	5,657	5	1												1	
Anoka.....	3,769	4,053	6	1													
Austin.....	5,474	6,489	6	1													
Barnesville.....	1,326	1,566	3	1													
Bemidji.....	2,183	3,800	3			1											
Blue Earth.....	2,900	3,364	1														
Brainerd.....	7,524	8,117	1														
Chaska.....	2,165	2,085	*														
Chatfield.....	1,426	1,300	*														
Cloquet.....	3,074	6,117	2			1											
Crookston.....	5,359	6,794	8	1		1		2						1		1	
Detroit.....	2,060	2,149	0														
Duluth.....	52,968	64,942	70	8		12	1	7	2			1	1	3			2
E. Grand Forks.....	2,077	2,489	1														
Ely.....	3,712	4,045	5					1									
Eveleth.....	2,752	5,332	4											1		1	
Faribault.....	7,868	8,279	3														
Fairmont.....	3,440	2,955	0														
Fergus Falls.....	6,072	6,692	5			1											1
Granite Falls.....	1,214	1,340	*														
Hastings.....	3,811	3,810	1														
Hutchinson.....	2,495	2,489	1														
Jordan.....	1,270	1,311	1														
Lake City.....	2,744	2,877	2														
Litchfield.....	2,280	2,415	7				1										
Little Falls.....	5,774	5,856	2														
Luverne.....	2,223	2,272	0														1
Le Sueur.....	1,937	1,842	0														
Madison.....	1,336	1,604	11	1	1	1								1	1		
Mankato.....	10,559	10,996	0														
Marshall.....	2,088	2,243	0														
Melrose.....	1,768	2,151	*														
Minneapolis.....	202,718	261,974	242	22	4	34	5	1	1			1	1	7	4	1	14
Montgomery.....	979	1,281	1	1													
Montevideo.....	2,146	2,595	5	1	1												
Moorhead.....	3,730	4,794	6	2													1
Morris.....	1,934	2,003	*														
New Prague.....	1,228	1,419	1					1									
New Ulm.....	5,403	5,720	12	1		2									1		1
Northfield.....	3,210	3,438	3											1		1	
Ortonville.....	1,247	1,612	1														
Owatonna.....	5,561	5,651	5												1		
Pipestone.....	2,536	2,885	5														
Red Lake Falls.....	1,885	1,797	0														
Red Wing.....	7,525	8,149	15														
Redwood Falls.....	1,661	1,806	2		1									1			1
Renville.....	1,075	1,229	0														3
Rochester.....	6,843	7,233	18		1												
Rushford.....	1,100	1,133	0														
St. Charles.....	1,304	1,238	0														
St. Cloud.....	8,663	9,422	5														
St. James.....	2,607	2,320	2			1											
St. Paul.....	163,632	197,323	169	14	4	15	1	7			1		1	6	8		14
St. Peter.....	4,302	4,514	5	1			1										1
Sauk Centre.....	2,220	2,463	4	1													
Shakopee.....	2,046	2,069	*														
Sleepy Eye.....	2,046	2,312	5														
So. St. Paul.....	2,322	3,458	9	1		2				1				1			3
Stillwater.....	12,318	12,435	1														
Thief River Falls.....	1,819	3,502	1														
Tower.....	1,366	1,340	*														
Tracy.....	1,911	2,015	2														
Virginia.....	2,962	6,056	*														
Wabasha.....	2,528	2,619	*														
Warren.....	1,276	1,640	1														
Waseca.....	3,103	2,838	*														
Waterville.....	1,260	1,383	0														
West St. Paul.....	1,830	2,100	5														
Willmar.....	3,409	4,040	1														1
Windom.....	1,944	1,884	1														
Winona.....	19,714	20,334	19	3		3	1					1			1		2
Worthington.....	2,386	2,276	0														

*No report received Health officer not doing his duty

REPORTED FROM 65 VILLAGES HAVING A POPULATION OF 1,000 OR UPWARDS
FOR THE MONTH OF NOVEMBER, 1907

VILLAGES	Population of U. S. Census of 1900	Population of State Census of 1905	Total Deaths	Tuberculosis of Lungs	Other Forms of Tuberculosis	Pneumonia	Bronchitis	Diphtheria	Scarlet Fever	Measles	Smallpox	Whooping Cough	Cerebrospinal Meningitis	Typhoid Fever	Diarrheal Dis- eases of Children	Puerperal Septicemia	Cancer
Ada.....	1,253	1,515	1														
Adrian.....	1,253	1,184	1														
Aitkin.....	1,719	1,896	1														
Akeley.....		1,636	4		1												
Alexandria.....	2,681	3,051	1														
Appleton.....	1,184	1,321	1														
Belle Plaine.....	1,121	1,301	1														
Benson.....	1,525	1,766	1														
Breckenridge.....	1,282	1,850	1														
Buffalo.....	1,040	1,124	1														
Caledonia.....	1,175	1,405	1														
Canby.....	1,100	1,505	1														
Cannon Falls.....	1,239	1,460	1														
Cass Lake.....	546	1,062	1														
Chisholm.....		4,231	6			2											
Dawson.....	962	1,056	1			1											
Delano.....	967	1,023	0														
Fosston.....	864	1,000	1			1											
Frazee.....	1,000	1,146	2														
Glencoe.....	1,780	1,805	3			1											
Glenwood.....	1,116	1,718	1														
Graceville.....	856	1,032	1														
Grand Rapids.....	1,428	2,055	6						1								
Hallock.....	805	1,014	0														
Hibbing.....	2,481	6,566	12			1											
Jackson.....	1,756	1,776	0			1											
Janesville.....	1,254	1,205	1														
Kasson.....	1,112	1,049	1		1												
Kenyon.....	1,202	1,252	1		1												
Lake Crystal.....	1,215	1,231	1														
Lanesboro.....	1,102	1,041	1		1												
Long Prairie.....	1,385	1,256	2														
Madelia.....	1,272	1,290	0														
Milaca.....	1,204	1,319	0														
Mountain Lake.....	959	1,063	0														
North Mankato.....	939	1,129	0														
North St. Paul.....	1,110	1,400	0														
Olivia.....	970	1,019	0														
Osakis.....	917	1,056	1														
Park Rapids.....	1,313	1,719	2						1								
Pelican Rapids.....	1,033	1,095	1		1												
Perham.....	1,182	1,366	1														
Pine City.....	993	1,092	0														
Plainview.....	1,038	1,140	2														
Preston.....	1,278	1,320	0														
Princeton.....	1,319	1,704	1														
Rush City.....	987	1,041	0														
Rushford.....	1,062	1,040	1			1											
St. Louis Park.....	1,325	1,491	1														
Sandstone.....	1,189	1,589	0														
Sauk Rapids.....	1,391	1,552	0														
Scanlon.....		1,122	1														
South Stillwater.....	1,422	1,572	1		1												
Springfield.....	1,511	1,546	1		1												
Spring Valley.....	1,770	1,573	0														
Staples.....	1,504	2,163	1														
Two Harbors.....	3,278	4,402	8			1											
Wadena.....	1,520	1,868	2														
Wells.....	2,017	1,814	0														
West Minneapolis.....	2,250	2,530	0														
Wheaton.....	1,132	1,346	1														
White Bear Lake.....	1,288	1,724	1														
Winnepago City.....	1,816	1,553	0														
Winthrop.....	813	1,031	0														
Zumbrota.....	1,119	1,129	1														
State Institutions.....			34	6	1	4											1
Other parts of State.....	1,012,328	1,085,886	609	50	4	37	5	14	4	3		2	2	10	17	3	35
Total for State.....	1,751,395	1,979,658	1399	122	16	132	16	35	7	4	1	4	5	34	36	6	81

Still births and premature births, 68 (not included in above totals).

*No report received Health officer not doing his duty

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STUDIES IN ROCKY MOUNTAIN SPOTTED FEVER

BY WM. M. CHOWNING, M. D.

MINNEAPOLIS

In Vol. I, No. 1, p. 44, Journal of Infectious Diseases, appears the statement that in the blood of seventeen cases of Rocky Mountain Spotted Fever, no bacteria are found. However, a study of the material from these cases shows that organisms, apparently of plant life, are present in each of them.

With the purpose of attempting to explain this apparent inconsistency, the work of systematically studying the old, as well as the more recently collected, material, has been continued during the past three years. A portion of each year since and including 1902, has been spent in field and laboratory, and at the present time the material studied represents 44 human cases, in 16 of which post-mortem examinations were made, material collected, and, in many of them, cultures taken.

I first noticed pleomorphic masses of organisms in paraffin section of the heart-wall of a 1902 case, in which all cultures taken at autopsy, three hours after death, were reported negative. These bacteriological results have been since verified many times by different observers, and we may safely accept them as correct, so far as the common media used indicate.

In another 1902 case, studied by four different observers, blood was examined in hanging drop for several continuous hours. At this examination the motile intracellular parasite was observed and sketched by Wesbrook, as published in The Journal of Infectious Diseases (Wilson & Crowning), Vol. I, No. 1, p. 48. In all the material taken at this examination evidence of plant life is abundant.

A 1903 case, studied clinically and at autopsy by Anderson and Wilson, offers exceptionally good material for study, inasmuch as these observers, working independently, report practically identical findings in their cultures, viz., staphylococcus albus and an organism resembling bacillus coli communis. Neither of these bacteria could possibly be confused with the streptothrix-like organism, with its rods and chains, and lanceolate, ovoid, coccoid, and spheroid bodies, which are culturally negative to the media used at that autopsy, and which are abundant in blood-smears taken before death and in the autopsy material, as stained with carbol fuchsin.

My attention has been particularly directed to the study of the following series of cases, in which the technic employed in collecting specimens has been under either my personal supervision or observation, and which includes only four of the above-noted seventeen cases.

FATAL CASES			No. of days
Name.	Year.	Source of blood.	ante mortem
No. 1.	1903.	Median basilic vein, with sterile needle	3
No. 2.	1903.	Median basilic vein, with sterile needle	5
No. 3.	1905.	Median basilic vein, with sterile needle	3
No. 4.	1906.	Median basilic vein, with sterile needle	6
No. 5.	1906.	Median basilic vein, with sterile needle	7

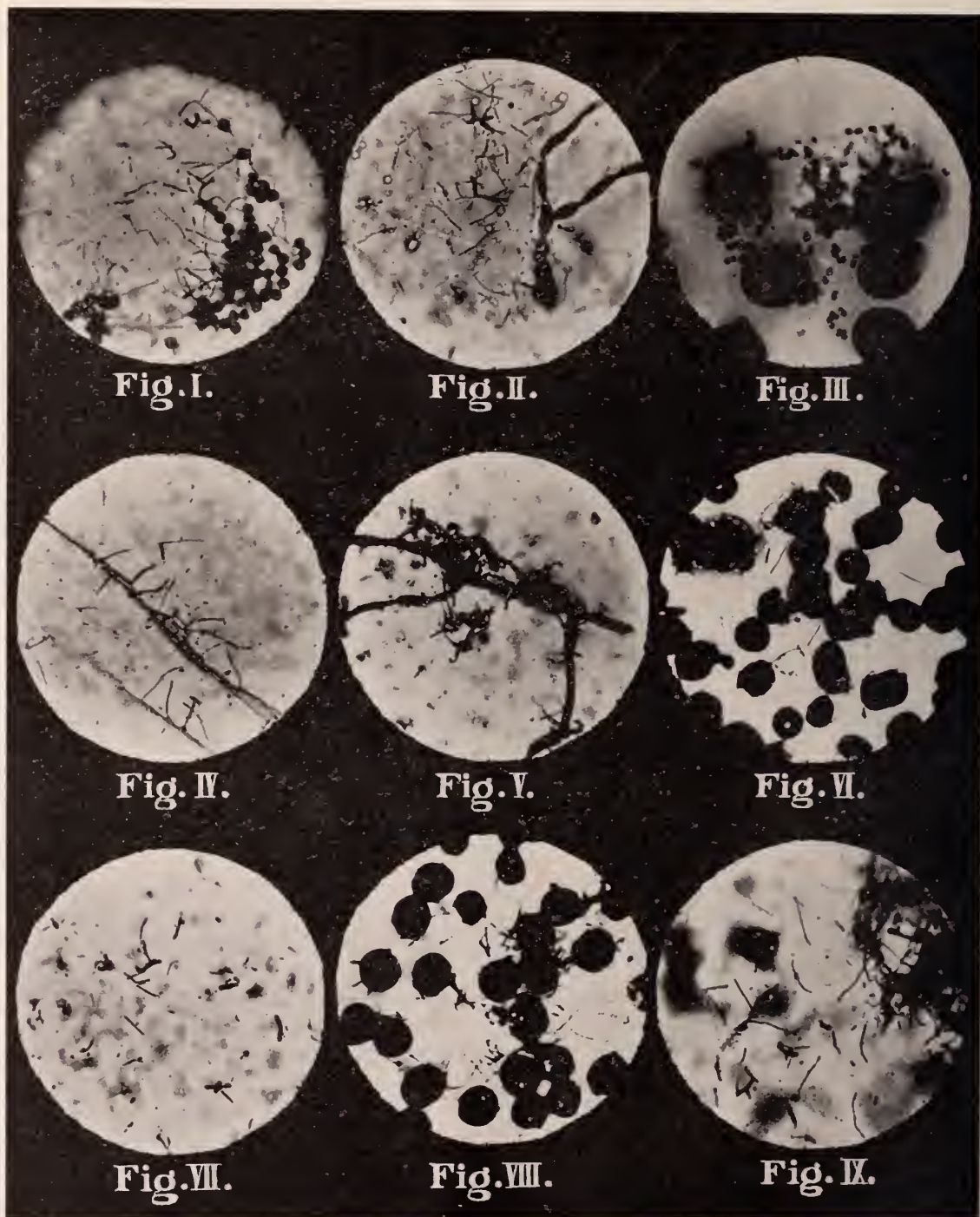


Fig. 1. Human blood from a 1902 case in which all cultures inoculated with heart blood at autopsy were negative. (667 diameters.)

Fig. 2. Human blood from a 1903 case in which all blood cultures on common media were negative. Blood taken from median basilic vein. Fatal case. (667 diameters.)

Fig. 3. Human blood from a 1905 case, from median basilic vein. Recovery case. This photograph is given to show the tendency to linear arrangement of coccoid and bacilloid bodies. In places the lines are fairly well preserved. Other fields in the specimen show unbroken rods and chains. (1,334 diameters.)

Fig. 4. Human blood from a 1906 case (field adjoining Fig. 5) taken from median basilic vein, seven days be-

fore death. Cultures on agar and serum negative. (667 diameters.)

Fig. 5. Human blood from a 1906 case. Same as Fig. 4. (667 diameters.)

Fig. 6. Human blood from a 1907 case, from median basilic vein. Recovery case. Cultures taken on common media negative. (667 diameters.)

Fig. 7. From blood of a lamb experimentally injected with blood of a fatal case in 1905 by Dr. Edward Francis, U. S. P. H. M. H. S., and Dr. W. M. Chowning. (667 diameters.)

Fig. 8. Blood of a guinea-pig, inoculated with human blood by Dr. Ricketts in 1907. (667 diameters.)

Fig. 9. From salivary gland of a tick experimentally inoculated by Dr. Ricketts in 1907. (667 diameters.)

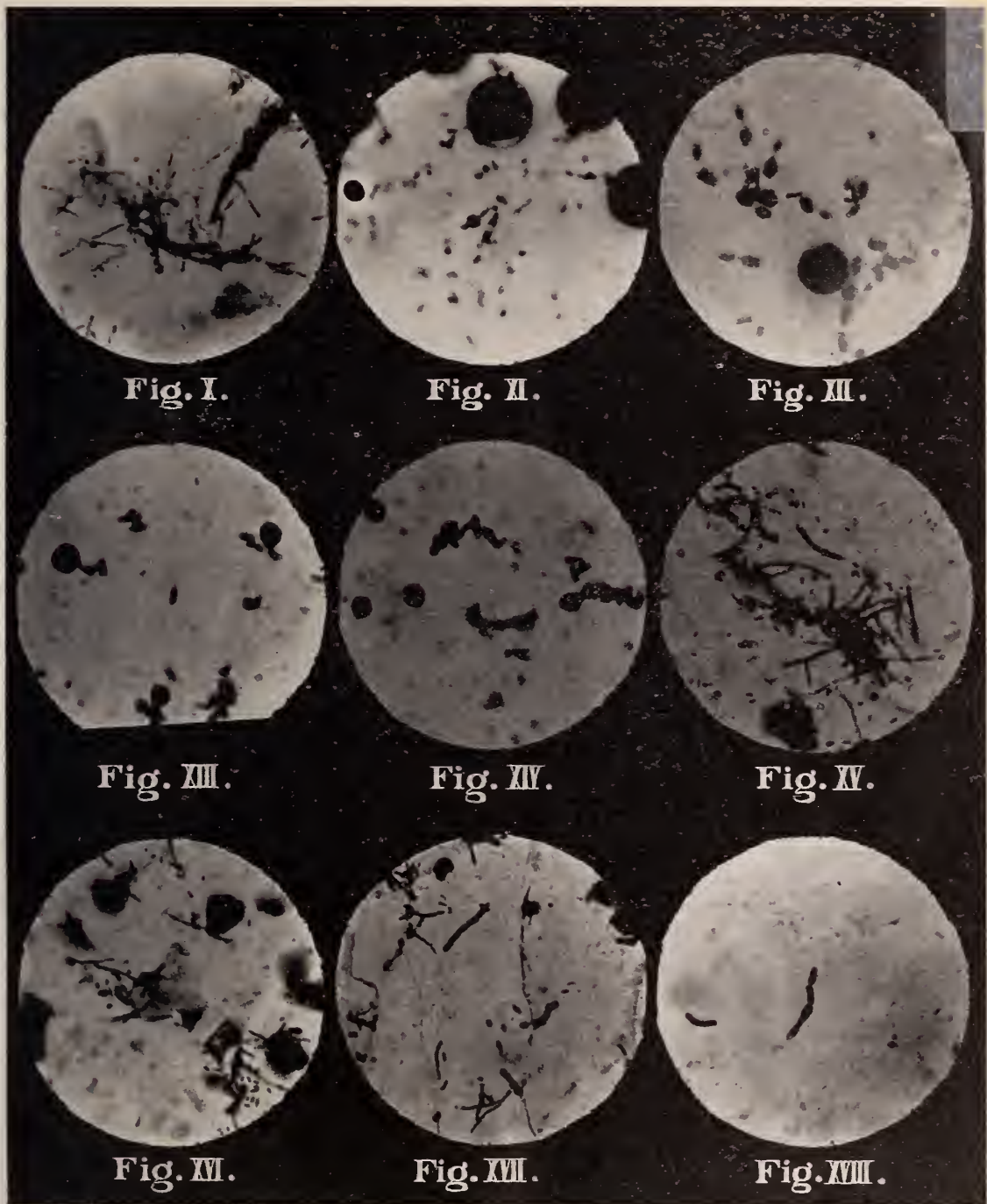
**Fig. I.****Fig. II.****Fig. III.****Fig. IV.****Fig. V.****Fig. VI.****Fig. VII.****Fig. VIII.****Fig. IX.**

Fig. 10. Culture in beerwort broth inoculated with blood from a 1907 recovery case. (667 diameters.)

Fig. 11. A high magnification (1,334 diameters) of a portion of the slide shown in Fig. 3. In the center of the field is a chromatic rod, apparently bent on itself, near one end of which is a chromatic sphere, which, so far as can be determined by focusing, is a part of the rod. The other end is swollen. Other organisms in the field are out of focus.

Fig. 12. A high magnification of a portion of the slide shown in Fig. 6. (1,334 diameters.)

Fig. 13. A field from the same slide showing spheres. (667 diameters.)

Fig. 14. A field from beerwort-broth culture, showing spheres. (667 diameters.)

Fig. 15. A field from the blood of a culture-inoculated guinea-pig. (667 diameters.)

Fig. 16. A field from a culture made from the blood of the same pig. (667 diameters.)

Fig. 17. A field from a tick taken from a 1903 human case. (667 diameters.)

Fig. 18. A field from beerwort-broth culture showing chain formation. (667 diameters.)

RECOVERY CASES

Name.	Year.	Source of blood.	No. of days ante mortem
No. 6.	1903.	Ear blood	
No. 7.	1903.	Ear blood	
No. 8.	1905.	Ear blood	
No. 9.	1906.	Median basilic vein, with needle	4
No. 10.	1906.	Median basilic vein, with needle	4
No. 11.	1907.	Median basilic vein, with needle	4
No. 12.	1907.	Median basilic vein, with needle	4
No. 13.		Ear blood	

The manner of obtaining the blood offers evidence against possible contamination of the smears during collection, and also against the argument that the organisms may be a terminal infection of the patient, inasmuch as eight are recovery cases, and of the fatal cases no specimens collected later than three days before death were used in the tests.

New slides thoroughly cleansed and sterilized in packages to be opened only when used, were carefully smeared with blood, taken under strict aseptic technic, preferably from the median basilic vein, with a needle when permitted, or from the ear in the usual manner. They are then fixed when dry by covering with absolute alcohol, which is allowed to evaporate at the room temperature.

Under the various methylin-blue stains these forms are practically untouched, or, at best, very faintly outlined. In order to overcome this the following technic has been employed with quite uniform results:

Staining Technic: Cover the smears with distilled water and add an equal quantity of Ziehl-Neilson carbol-fuchsin solution. After ten minutes wash the solution away by adding distilled water through a siphon, being careful to avoid striking the smear with the stream. By so doing a scum, which forms on the surface of the staining solution, readily floats off; whereas, if the solution is poured off, the scum frequently becomes adherent to the surface of the smear. Wash again rapidly in distilled water to which a trace of hydrochloric acid has been added. Wash again thoroughly in distilled water. Dry in air or over a low flame, and mount.

Experience has shown that the use of blotting-paper for drying is injurious both to the blood-elements in the smear and to the organisms, which are prone to occur in clumps that are eas-

ily broken or completely obliterated by rough handling, consequently I have been in the habit of placing the slides on end in the paraffin oven, or in a dust-proof receptacle over a low flame.

One can control the staining process by examining under a No. V dry lens, the clumps being clearly visible in this magnification.

To facilitate examination of smears of blood, focus with the dry lens upon the margin of serum lying just outside the line of blood-cells and, preferably, at the end from which the smear was made. By so doing one is very likely to find clumps of organisms in a field unobstructed by blood-cells. A little experience with alternate low-power and high-power examinations soon enables one to choose quickly with the low-power lens the fields for high-power examination.

The red-blood cells take a deep, clear red with clear-cut periphery, and the blood-plates and nuclei of leucocytes a faint red, while the plasma remains colorless, making a very good background for the study of the organisms, with their clear-red or pink protoplasm and deep-red chromatic elements. A more beautiful specimen may be obtained by first over-staining the smear with carbol thionin, then with carbol fuchsin as above, except that the acid wash is omitted, as it quickly removes the thionin. In such a specimen all blood-elements take the thionin, the nuclei of the leucocytes being a deep purple, and the organisms, stained with fuchsin, are studied over the blue background of plasma. If well controlled this method will show fuchsin-stained organisms within the thionin-stained phagocytes.

MORPHOLOGY OF THE CLUMPS

The predominating, characteristic forms are the rods, straight or curved, and the chains of ovoid, coccoid, or bacilloid bodies. However, a description of the forms which are found in these clumps is incomplete if the individual coccoid, bacilloid, spheroid, clubbed, irregular, and apparently branching types are omitted. In size they vary from a rod or a chain 12 to 18 micra in length, and 1.5 micra in breadth, to minute diplococcoid and lanceolate bodies, that require a magnification of 1,300 diameters. Or in fields in which the fungus-like body, as shown in Figs. 2 and 5, is present,—to which reference is made below,—we find spheres two-thirds the diameter of red cells and stalks varying greatly in length and breadth.

Between these extremes we find rods and chains of varying length and breadth. The minute diplococcoid bodies, as shown in Figs. 3 and 4, are

prone to occur singly, while the minute lanceolate bodies containing usually one or two chromatic granules are often found in formed groups.

In all these forms the chromatic substance varies greatly in size, morphology, and distribution within the individual organisms.

The spheres, as shown in Figs. 2, 5, 12, and 13, appear in a position that would suggest that they are born on the rods; however, they do not stain as do spores ordinarily, being frequently decidedly chromatic. They may occur in groups, as seen in Fig. 1, or in chains of a half-dozen, or in pairs—a very common occurrence (Fig. 12). At least some of the rods break into chains of individuals, varying considerably in number and resembling, to a certain extent, cocci or short bacilli. They are, for the greater part, more pear-shaped than round or oblong, and contain chromatic material, which is likely to be at one pole or the other, or at both poles; however, it may be along the inner periphery. Often one sees bodies that are partly rod and partly chain, or a rod with swollen segments here and there, forming dumb-bell or clubbed forms (Fig. 11).

The presence of these streptothrix-like organisms associated in fields, such as are shown in Figs. 2, 4, and 5, with stalks bearing shoots, which resemble very closely in morphology and staining reaction many of the rods seen in such fields as Figs. 1, 6, 7, 8, and 9, is not an uncommon occurrence. Of the 44 cases this association has occurred in 18, including 5 of the series of 13.

The result of this technic, as employed in human cases, has led me to examine in like manner material from rabbits, sheep, and guinea-pigs inoculated with blood from cases; also material from ticks taken from patients during the attack of fever. Tick No 1 was taken from a 1903 case; No. 2, from a 1906 case; and tick No. 3 was inoculated experimentally by Dr. Ricketts in 1907. In all these, except the rabbit, exact reproduction of the pictures in the human blood are found. In the tick material the above-noted association with fungoid bodies, spheres, etc., is observed.

It seems quite possible that some at least of the rods seen in Figs. 1, 2, 4, 6, 8, and 9, may be submerged branches of a fungus.

CULTURES—A PRELIMINARY NOTE

Attempts have been made in the past two years to cultivate on artificial media a growth that would conform, morphologically, to the pleomorphic groups seen in the human blood and in the blood of inoculated animals. Novy's blood-agar, blood and nutrose, blood and water, blood and salt solution, blood and broth, ovarian-cyst fluid,

and hydrocele fluid, in various dilutions, have been used. Of these human blood diluted four times in volume with either normal salt solution, water, or plain broth, has given growths negative to controls, which, in morphology, resemble the forms seen in the blood of fever cases, and, when injected into guinea-pigs, was followed by a rise of temperature, swelling of the testicles, emaciation, and death in some instances. The difficulty of getting a sterile medium from these materials is, of course, great, and, moreover, the degenerating blood-elements are present to befog the examination of the culture in both hanging-drop and stained-smear preparations.

In 1907 I began the use of beerwort, the suggestion for which I am indebted to Dr. Heineman, of Chicago University. Various dilutions have been used by making it up with either agar or plain broth, combinations of one-third beerwort with two-thirds plain agar, and one-fourth beerwort with three-fourths plain broth, have, when inoculated with blood from three 1907 cases, remained negative to controls, and yet they contained rod-like organisms, chains, spheres, coccoid, bacilloid, irregular, and branching forms, which conform, in morphology and staining reaction, to those seen in the blood of patients and inoculated animals and in the material taken from infected ticks, and which when injected into guinea-pigs is followed by rise in temperature, swelling of testicles, emaciation, and, as a rule, recovery.

Cultures injected into frogs gave negative results. Three horses injected with cultures from a culture-inoculated pig developed a marked rise in temperature followed in two cases by death. Material from these animals is still under observation.

No method has been devised to determine the purity of the beerwort cultures, except in so far as the common-media controls indicate. They appear no more, nor no less, contaminated than do the clumps of organisms in the human blood. They are irregular to gram, and are lightly stained with 1 per cent aqueous methylin-blue.

THE TREATMENT OF JOINT TUBERCULOSIS IN CHILDREN

Leonard W. Ely, of New York, says that the essential idea of joint treatment is rest. He describes the apparatus by which this is to be attained in each of the various joints that are commonly affected in the body, with the method of application of plaster dressings and braces. He then describes the general treatment that is most efficacious.—*Medical Record*, December 7, 1907.

PRACTICAL SUGGESTIVE THERAPEUTICS*

BY A. E. CLOUGH, M. D.

MADISON, S. D.

The physician who dabbles in psychology is liable to be misunderstood by the laity and misrepresented by his competitors, and, especially if he practises hypnosis, will the goody-good calomel and jalap doctors kindly inform the laity that he is a dangerous character and that it is unsafe to enter into a discussion with him for fear of being hypnotized, even against their will. Meantime these doctors will continue to write prescriptions for the relief of symptoms that do not yield and pass their patient on from one doctor to another until the patients finally abandon hope of relief from internal medication, when, as a rule, they turn themselves over to the Osteopath to have a few vertebræ replaced, many times a dislocated rib adjusted, the stomach massaged, and the shoulders brought back at so much per. The treatment continues until financial difficulties accumulate to such an extent as to make further treatment impossible, and they move on, advised that the good work is well begun, but unfinished for lack of funds.

If only two points in a medical case could be well understood, and if the doctor who understands them would be honest with himself and with his patients, it would be far better for our patients and for the progress of medical science.

The first point to be considered is, that all physical diseases are accidental and are self-limited, ending in recovery or death, viz., typhoid fever, malarial fever, typhus, diphtheria, scarlatina, variola, measles, pneumonia, gonorrhea and syphilis, and many others, all of which have their specific cause, to which may be added all irritant and noxious substances, such as produce inflammatory conditions of any and all parts of the body. Our best service to humanity is to discover and apply such remedies as will eliminate, as rapidly and surely as possible, such germs, ptomaines, poisonous substances, and irritants as are the cause of the disease, and to support the body while the depressing effect of the toxic agent is doing its work, and thus lessen the prospect of dissolution.

The other fact referred to is, that mental conditions are able to produce, at least primarily, functional disturbances that inhibit the action of organs whose proper operations are vital to phys-

ical health, causing obstructions and change of chemical conditions so that secretions are erosive in character or ineffectual in fulfilling the special duty assigned by nature to such organs.

We are accustomed to call our psychic patients such opprobrious names as neurotics, neurasthenics, hypochondriacs, and various other epithets calculated to convey a sense of our wisdom and the artlessness of the patient, and then to write complicated prescriptions, wherein one drug often counteracts the action of some other drugs, such as the long list of bromides, hyoscyanus, passiflora, etc., to say nothing of the anodynes, narcotics, stimulants, and a multitude of other complicated remedies, so called, that rob the patient of what little judgment he has left, reminding one of a medical discussion that I read in an old medical paper dated about one hundred years ago, in which the chief contention was whether it was best to advise a patient to get thoroughly drunk two or three times a month or to keep half drunk all the time.

To summarize: every conscientious and intelligent physician should be able and honest enough to distinguish between diseases that have specific physical causes and those which are the result of abnormal thought-processes. And our schools should teach specific and dynamic psychologic laws, so that physicians could be possessed of legitimate means of combating psychic defects, for it is possible of demonstration that as large a percentage of psychic diseases are amenable to mental and even drugless treatment as is the case with purely physical diseases consigned to drug treatment, and not be subject, as has been my experience, to being considered a freak and a crank for introducing rational methods in these otherwise hopeless cases.

Allow me to append a few of the mental specifics to be administered until the patient has a full comprehension of the truth of their application and can go out and defend himself against the attacks of his friends who are too dense to understand his needs and his remedy, and of his family doctor, whose faith has never reached beyond calomel, jalap, and podophylin, and who will possibly give him the laugh if he tells him a few things said family doctor does not happen to have in his grip.

*Read before the South Dakota State Medical Association, May 29 and 30, 1907.

Allow our patient to name some of the psychologic specifics which he is using for a mental tonic and stimulant, and, if you please, throw in an anodyne or two, specifics for a mind diseased, but not yet lost.

Psychology is the science of mind or mental philosophy. The mind is the controller of the body. The mind is divided into two parts, the conscious mind and the subconscious mind. The conscious mind is that part of our thinking faculty whose action we are conscious of. It depends for its strength upon the development of the brain cells and is directed by the will. The subconscious mind is that part of our thinking faculty which controls all the functions that relate to life. The will is the director of the conscious mind, directing it toward the things that we desire. If the will be weak and the desire or expectation of health not clear and strong, then set up new desires and by the psychologic law of repetition and declaration strengthen the will, enabling it to direct the mind away from the cause and symptoms of disease and toward health, whose other name is success and happiness, which it is the inalienable right of every human being under the light of God's shining sun to enjoy and possess.

All of the facts relating to the control of the different organs of the body by the subconscious mind, the functions of the various organs in health and disease, the effect of thought upon the function of organs, with mental pictures of individuals of the optimistic school and also of the pessimistic, thrown in strong contrast, together with nature's plan for perfect physical health and mental happiness—all these topics should be amplified to the patient so as to give a clear conception of the difference between health and disease, and the patient should be led to formulate a strong and unyielding desire for health, and when this desire has become sufficiently strong to call out a great effort, on the part of our patient, we shall be able to instill the law of mental health into the mind of our patient, and, as the mind is the controller of the body, the body will demonstrate health under this law of control just as the face will smile when happy thoughts are in the mind, and as the body will bend and tremble when some great grief has seized upon the mind.

Cynics may smile, but if they will visit a few of the more than four hundred patients treated by me on this psychologic plan I will show them something that will dissolve their doubts like fog in the sunshine; and, too, this method of treat-

ment will save them the humiliation of converting their patients into drug fiends or sending them to faith curers and Christian Scientists, whose impossible vagaries have nothing whatever to do with the many recoveries we must wonderingly acknowledge in spite of said vagaries, for they are unconsciously using psychologic remedies, which should be demonstrated and applied by intelligent medical men.

I am aware that this paper is an innovation, and it is so designed, but I do not fear to meet any argument that can be put forth in public or private. Being only too well aware of the skepticism of many medical men, allow me to append a statement of facts well known to psychologists, but often overlooked by physicians, whose mental sight is focused on physical objects only.

Professor Elmer Gates, of the Laboratory of Psychology at Washington, D. C., has often demonstrated to his class, by immersing his arm in a water-jar, that concentration of the mind on the arm would cause it to be distended with blood sufficient to displace quite a large quantity of water. It is also demonstrable that the temperature of a part may be raised by the same process. He has also of late demonstrated that the breath of an individual in normal mental composure, passed through a condensing tube, left a clear, colorless liquid in the tube. He made the subject angry, and a brownish substance appeared in the tube. This may be the explanation of the dark-brown taste frequently spoken of. He also demonstrated that sorrow deposited a gray substance and remorse a pink substance, while all physiologists well know that the secretions of the body and the chemical conditions of the blood are changed by differentiating the mental states.

The brown substance above mentioned when administered to animals produced nervous excitation and irritability. Parallel this, if you please, with the popular opinions regarding the demonstration of rabies. Professor Gates gives the opinion that enough poison would be eliminated from the body during one hour of intense hate to destroy the lives of four score persons, and says this is the deadliest poison known to science.

Allow me to cite a few cases treated solely by psychologic suggestion that fairly illustrate the results of this method of treatment:

Mrs. W., aged 43 years, was thrown from a carriage in the spring of 1900, injuring the right side, hip and back. She was bedfast for four

years, being unable to stand on her feet during all this time. She entered our hospital in March, 1904, and was at this time thin and weak and had insomnia, indigestion, constipation, and continual pain in the region of the injury. Without medication or any other treatment all symptoms yielded to suggestion. She walked about the city, erect, and gained flesh to the amount of 23 pounds in thirty days; all symptoms of sickness disappeared, and she has remained entirely well since her discharge. Previously she had been treated by all medical methods, electricity, and osteopathy, without avail.

Mrs. H., aged 40, bright, educated woman, suffered with amyloseous dyspepsia, had exhausted all medical treatment under numerous physicians, and was at the time of entering the hospital entirely bedfast, living solely on small quantities of broiled steak and hot water. She was treated purely by suggestion. Opened her diet fully after two weeks of treatment. She gained nineteen pounds, returned home entirely recovered, and has remained strong and vigorous since she was discharged from hospital.

Mrs. K., aged 26 years; one child. Entered hospital September, 1905. Had for six years been subject to attacks in which she had often lain unconscious and rigid for from a few hours to sixty hours, resisting all methods of treatment. She was treated solely by suggestion for sixty days. Attacks ceased, health returned, she gained 30 pounds, and has had no return of attacks since. She belongs to clubs and reading circles and does all her own housework, and is as self-confident as could be desired. About \$3,000 were invested in Osteopathy in the interest of this case before psychologic treatment began.

I will not consume space to enumerate more cases, but if the subject should be of sufficient interest I will give addresses of patients to any inquirer for personal investigation of many cases.

The question may be asked if it is necessary to hypnotize a subject for this method of treatment, and I answer no, merely impress the patient strongly by logical argument and positive statement, and results will follow.

There are many conditions where a combination of causes, both mental and physical, are responsible for disease, and in such, rational medication, correction of physical and mental habits and rational mental therapeutics will operate together to the entire satisfaction of both patient and physician.

I have introduced this subject because there is a public demand for newer and more comprehensive methods of treatment in the perplexing field of mental diseases, and because educated medical men are the proper authority to decide all questions that relate to health; and the great advance in medical and surgical knowledge should include all subjects that relate to man's physical and mental welfare.

Man is progressive unless bound and restricted by the teaching of dogmatic faith. But the password of to-day is liberty of thought and freedom of action, which leads man onward toward the wished-for goal.

And this it is that justifies the whole.

This is thy greatness; thou hast stumbled oft
And straying often fallen; yet all the while
Wandering the stormy wilderness of life
Thine eyes were fixed upon the steadfast star
That far off stands above the promised land.

DISCUSSION

DR. D. W. CRAIG (Sioux Falls): I feel very reluctant to say anything on this paper, but the discussion from Dr. Bell, also from Dr. Mead, and the nature of the paper have been of much interest to me. I certainly shall enjoy studying the paper over when it is printed in *THE JOURNAL-LANCET*. It reminds us of the paper that was read in Watertown last year on Osteopathy. There are a great many cases that can be treated in this way, and if the cases are properly selected it is a valuable treatment.

If we had a man who understood massage, we could keep our patients from the Osteopaths, Christian Scientists, and other fakirs. In this way we would not only build up our practice, but would add to our list a good means of treatment.

DR. W. H. SUBERA (Sioux Falls): I believe there is a field for suggestive therapeutics, and I want to report one case: I was consulted in my office by a woman about 60 years of age, the wife of a farmer, for hoarseness of about six months' duration. She could not speak above a whisper. I prescribed the usual remedies, and she returned in about one week, with no improvement. I changed the prescription, and said if that failed I knew I could cure her all right without medicine. (I said I could, not that I thought I could, for I wished to make an impression by being emphatic.) She returned after another week, with no improvement. I placed her in the first degree of hypnotism, and she could speak aloud. I repeated this five times at intervals of a day or two, when she could talk as well as she ever could. She was happy, and her husband and family were pleased also.

I charged the husband \$25.00. He was well pleased and remarked that \$50.00 would have been cheap as results were all that could be desired.

I desire to add that I first satisfied myself that there was no organic trouble in the case.

DR. A. E. CLOUGH (Essayist): I wish to thank the doctors who have discussed my paper for their kindness and the extreme courtesy of their remarks.

My object in introducing the subject of psychological

suggestion at this time is because I think the time has come when the profession must demand the recognition of psychology by the colleges.

All the vagarists, such as Christian Scientists, faith curers, Dowieites, Osteopaths, and all other faddists are claiming to be the educators of the medical profession upon this subject, and medical men are suffering as the result of their claims.

The cases that I have cited in my paper are not of more particular interest than many others that I have treated by this method, and even in this class of cases, so far away from the reach of drug treatment, I have been too often confronted with the blind indifference of medical men, who would sneeringly denominate them imaginatives, neurasthenics, etc. Nevertheless, this

class of patients are successful destroyers of medical reputations.

It is the prerogative of our profession to exercise discriminating judgment in this, as well as in other, diseased conditions, and I see no reason why our colleges should not equip the physicians whom they send out, for the treatment of psychic cases, as well as for medical and surgical cases.

It is up to the medical profession to rescue the unfortunate psychic from the rapacity of the fakirs, who, without knowledge and without conscience, are preying like vultures upon innocent victims, who, having no protection in the medical profession, turn to them as a last hope.

DISEASES IN WHICH FREQUENCY AND PAIN IN URINATION ARE PROMINENT SYMPTOMS, WITH SOME SUGGESTIONS AS TO DIAGNOSTIC TECHNIC*

BY A. W. ABBOTT, M. D.

MINNEAPOLIS

These symptoms are taken for the subject of this paper because they are present, either alone or combined, in so many diseases of the urinary system. Frequency and pain are so universally present in cystitis that other diseased conditions which also give rise to them, are often overlooked. This is the point upon which I wish to lay special stress.

Many cases that have drifted along for weeks and been regarded and treated as ordinary inflammation of the bladder, prove to be advanced tubercular disease, stone, ulcer, cancer, or other tumor of the bladder, etc. That such is the case does not necessarily depend on ignorance of symptoms or neglect. Many practitioners have neither the instruments needed nor clinical material enough to make themselves expert by the frequent use of these special aids to diagnosis; so that, without a practical knowledge of the technic and in the absence of instrumental facilities for a thorough examination of the urine and the urinary passages, serious conditions are often overlooked.

Frequent micturition is the most common symptom of urinary disease. Pain is of course the most commonly noticed by the patient.

Frequency of micturition with pain is present in—

Cystitis.

Urethritis.

Oxaluria.

Peritoneal adhesions preventing normal contraction of the bladder.

Prostatitis.

Malignant, prostatic disease.

Ulcer of the bladder (colon bacillus, staphylococcus, etc.)

Tuberculosis of the bladder.

Benign tumors of the bladder.

Malignant tumors of the bladder.

Foreign bodies in the bladder.

Stone in the bladder.

Stone in the lower ureter.

Pelvic peritonitis.

Bacteriuria.

Pelvic hematocele.

Vesiculitis.

Menstrual irritability of the bladder.

This form of irritable bladder is the only one that I know of to which the term irritable can be properly applied. I have examined the catheterized urine repeatedly under the condition, but have never found any abnormality. All other forms of so-called irritable bladder can be traced to some definite local diseased condition.

Frequency without pain in urinating occurs in—

Chronic nephritis.

Contracted bladder.

Compression of bladder by tumors.

Simple prostatic hypertrophy.

Tuberculosis of kidney or upper ureter.

*Read before the Hennepin County Medical Society Nov. 4, 1907.

Pyelitis and ureteritis from ordinary infections.
Diabetes mellitus.
Diabetes insipidus.
Certain nervous diseases.

Frequency is not a notable symptom of carcinoma, sarcoma, hypernephroma, or of cystic disease of the kidneys. Some of these diseases have their own intrinsic pains, but not pain in urinating.

The members of this Society are so familiar with the history and characteristics of these diseases that it will be entirely unnecessary for me to go into the details of their diagnostic symptoms. I shall therefore confine myself to some general suggestions as to the technic of the various necessary examinations of the urine and urinary tract.

Before urination, smears should be taken from the urethra and laid aside for examination.

In the female the catheter should if possible be used. In the male the urine should be passed in two separate amounts. The urine first passed washes out the urethral pus, if present, while the second amount will contain urine representing the condition of the bladder and above. All dishes and instruments should be clear of chemicals, especially lysol, as these may interfere with subsequent tests.

If possible place the urine in conical glasses and cover immediately. A microscopic examination should be made immediately and without drying before the chemical, as bacteria and spores of other micro-organisms invade the urine very rapidly. A drop unstained and another stained with methylene-blue should be examined. The first will disclose pus, blood, and bacteria; the second, the nature of the bacteria except tubercle. If the urine is allowed to settle before examination, the examiner will be deceived as to the amount of blood or pus, as the upper part will contain less and the lower portion more than the urine as passed.

A small drop of urine should be placed on the slide and covered with a large cover-glass, so that there will be no overflow, as pus and blood corpuscles tend to run out from under the glass when the excess of urine is blotted off the cover.

The amount of pus bears some relation to the inflammation. We are, however, very apt to be deceived by the amount of pus in the urine as to the extent of the inflammation. One drop of pus in 100 cc. of urine gives an average of about 10 cells in the field of the $\frac{1}{4}$ in. objective.

One drop of pus ($\frac{1}{8}$ in. cubed or about 1-500 of a cubic in.) will contain about 8,000,000 cor-

puscles, so that a few drops of pus in 100 cc. of urine will make the number of corpuscles too great to count. Unless the urine contains so much pus that it is impossible to count the corpuscles by ordinary methods, the albumin from the pus cannot be demonstrated chemically; that is to say, if the albumin derived from the pus coming from the bladder alone, and not from the kidney, can be demonstrated chemically, the pus-cells will be so numerous that they cannot be counted, except in the way we count the leucocytes in the blood. It requires about $\frac{1}{2}$ cc. of pus or about 10 drops in 100 cc. of urine to make a trace of albumin distinctly visible by the cold nitric-acid test. Urine containing three to five pus-cells to the $\frac{1}{4}$ in. field is always accompanied by symptoms. Normal urine does not contain any pus. One or two pus-cells found under the whole cover-glass may be neglected as probably urethral. A positive trace of albumin indicates a very extensive inflammation and generally ulceration of the bladder or more commonly accompanying kidney disease. A large amount of albumin points as a rule to involvement of the kidney.

Chemical examination should now be made. Enough of the urine should be reserved for the centrifuge, and the remainder allowed to settle for twelve hours to be examined for casts, crystals, tubercle bacilli, etc.

In examination for tubercle bacilli, a very rapid and satisfactory way of holding the sediment upon the cover-glass is to dry carefully over a small flame or in the oven until all moisture is apparently evaporated; then drop on carefully absolute alcohol for a few seconds. This is poured off and the specimen rapidly dried. Dehydration and coagulation are thus rapidly brought on, and the sediment will remain on the cover-glass during the staining process.

With a complete history of the case, palpation, and urinalysis, with a microscopic examination having been made, the examiner is in position to say whether the disease is a nephritis, tubercular disease, compression of the bladder by tumor, tumors of the kidney, bacteriuria, pelvic hematoma, pelvic peritonitis, pyelitis and ureteritis from ordinary infections, diabetes mellitus, diabetes insipidus, oxaluria, nervous disease, or menstrual irritability of the bladder.

Having gone so far the examiner will still be unable to tell whether the mucous inflammation of the urinary tract, is confined to the urethra, bladder, or above; whether there is ulcer of the bladder and its character; whether there are tu-

mors of the bladder and their character; whether a chronic nephritis is confined to one kidney or not; whether a tubercular disease is confined to the bladder or kidney; and, if to the latter, whether both kidneys are effected. He is often uncertain as to foreign bodies or stone in the bladder or ureter, and whether the symptoms are due to contracted bladder or whether there are one or two kidneys.

It is in these cases that, under appropriate conditions, the cystoscope, the ureteral catheter and the seggregator, and sometimes the skiagraph become absolutely essential for positive diagnosis.

Next to the microscope, the cystoscope is the most essential instrument for diagnosis of urinary diseases, while for appreciating any abnormal condition in the bladder itself it discloses what the microscope cannot. While the examiner should be familiar with the open and water cystoscopes, in the female Kelly's open tube with the distal electric light is the best instrument to use, because it is not only suited to visual examination, topical applications, and catheterization of the ureters, but the urine can be collected by it from one ureter, often saving the necessity for catheterization. All large collections of blood or pus must first be thoroughly evacuated.

Under ordinary circumstances, the knee-chest position is the best. The secret of making a satisfactory cystoscopic examination in this position depends largely upon its being done without pain and in placing the patient so that a good view, especially of the trigone, can be obtained. The first may be accomplished by thoroughly anesthetizing the urethra and bladder by an 8 or 10 per cent solution of cocaine; the second by bringing the patient so near to the edge of the table that the hips, with the thighs vertical, shall be as near to the examiner as possible. Now ask the patient to hollow her back as much as she can. In doing this she involuntarily relaxes the abdominal wall, and the bladder is therefore well ballooned. This simple suggestion has never failed, in distensible bladders, to give me an entirely satisfactory view of the whole bladder-wall.

By holding the open end close upon an orifice the urine may be collected by the cystoscope from one ureter, but it is necessary to caution the patient against any sudden movement, like coughing, as this throws the urine that has collected in the bladder from the other ureter into the cystoscope.

In the male the water cystoscope is the best on account of the difficulty of making any air distention of the bladder by means of any position,

on account of the pain produced by forcible distention by air, and on account of the necessarily increased length of the instrument. And hence the small field of view without magnification.

Two methods are in use for obtaining the urine from each kidney separately. One is the catheterizing of the ureters; the other is by the seggregation, which divides the bladder into two pockets, from each of which the urine is drawn. The first necessitates the cystoscope to find the ureteral orifices; the second is simple and can easily be learned by any one who can pass the ureteral catheter properly. In using the ureteral catheter care must be taken to use a stylet, small and flexible enough to follow the ureteral curves. Before insertion of the catheter, the stylet should be passed down to $\frac{1}{2}$ inch of the eye of the catheter and then bent over the proximal end so that it cannot by any chance be pushed into the eye and so endanger the ureter.

In the few cases (extensive ulceration, tumors near the orifice, etc.) where the orifices cannot be found, the catheter cannot of course be used. It must be remembered that some blood and consequently albumin are almost invariably found in the urine from the slight unavoidable wounding of the ureter. If the bladder is healthy the urine may be separated by catheterizing one ureter, withdrawing the cystoscope, washing out the bladder, and inserting an ordinary catheter into the bladder. It has been said that the urine may leak around the ureteral catheter and so become mixed with the urine from the other orifice. I have several times demonstrated by catheterizing both ureters and passing an ordinary catheter into the bladder that this is not the case. I have never with such an arrangement been able to get a drop of urine from the bladder catheter. It might occur if attempted in a ureter that had lately been dilated by the passing of a stone or otherwise. Under other conditions the grip of the orifice is sufficient to prevent any leak. If only one orifice can be found this method is also a positive means of determining whether or not there is another through which urine is passing.

The use of indigo-carmin is rarely of value in demonstrating a functioning kidney or to locate an orifice.

For separating the urine without the ureteral catheter I regard the Harris seggregator as the best instrument. Ordinarily in the female it is not necessary to use the suction part of the apparatus, if the patient's hips are raised sufficiently so that there is a slight downward inclination of the straight part of the instrument, as it then

acts as a siphon. In the male a gentle suction gives more certain results. If the uterus is retroflexed it should be placed in position before the instrument is used, as otherwise the urine is likely to run backward into the posterior part of the bladder, which has been carried backward by the retroflexion. This instrument cannot be used while a pessary is supporting the uterus, or when the bladder is distorted by contractures or pressure.

The presence of a slight trace of albumin contained in the urine, as separated, may be neglected if the urine just previously drawn by a catheter does not contain any.

The existence of a vesicovaginal fistula also precludes the use of the seggregator. In such a case, also, the bladder cannot be distended by air or water. The open Kelly tube is the only instrument by which the orifices can be found, and with this the effort, always difficult, will often entirely fail.

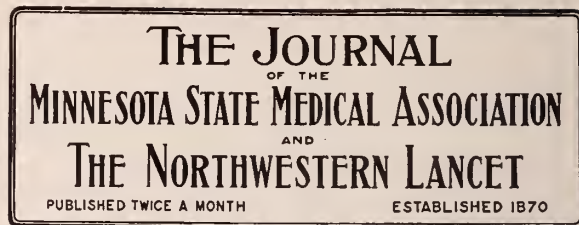
The skiagraph is more useful in confirming than making a diagnosis of stone in the kidney or ureter, but should be taken advantage of if symptoms exist which point to stone, but which are not corroborated by palpation or the urethral catheter.

Since the above was written Drs. Masten and Kibbie, of Ft. Worth, Texas, report having obtained a very good skiagraph of a bladder stone by introducing the plate into the vagina. (Journal of the American Medical Association, November 2, 1907.) They say: "Two Roentgenograms were made. The first was taken through the thickness of the pelvis, the other with the plate inserted in the vagina. The first showed practically nothing; the latter showed not only the stone, but what seemed to be a large hairpin."

On operation the stones and hairpin were found as shown in the second picture.

UPON WHAT DOES THE CURE OF TUBERCULOSIS DEPEND?

P. M. Pottenger, of Monrovia, Cal., says that from the bacteriological and physiological standpoint the important factors in the cure of tuberculosis are the virulence and numbers of the bacilli and the resisting power of the body. The aim of therapeutics should be to raise this resisting power. Important elements in the cure are early diagnosis, the use of fresh air and feeding to raise body resistance, and the stimulation of the formation of antibodies.—Medical Record.



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FEBRUARY 1, 1908

The annual meeting of the State Medical Association will be held at St. Paul, October 7 and 8, 1908.

CONFUSION REGARDING QUARANTINE FOR SMALLPOX

The following letter from the Secretary and executive officer of the Minnesota State Board of Health will speak for itself:

My Dear Doctor:

The impression seems to have gone abroad that the State Board of Health is abandoning all restraint of smallpox. This is not true. The last sentence in the new regulation (No. 11) reads as follows: 'The patient must not leave the house until after the removal of the warning card.'

The two important changes in methods of dealing with smallpox are:

1. No quarantine restrictions on well people living in a placarded house. The quarantine of the well but exposed individuals has proven an unnecessary and unwarrantable hardship. The old quarantine methods have been a source of great expense to both municipalities and individuals.

2. No fixed detention period for smallpox cases. With mild smallpox it is not practical to have a fixed length of time for quarantine (not less than four weeks under the old regulations). The new regulations place the responsibility for the time of release upon the at-

tending physician. (See Reg. 1.) The time of restraint will be short or long, according to conditions in each case.

With the history of smallpox as it has prevailed in Minnesota during the past nine years the Board should have the support of the entire state in these two changes. We have an illustration in our own state of the ineffectiveness of quarantine as a means of controlling smallpox, for during the past nine years there have been at least 50,000 cases of this disease in spite of the rigid quarantine demanded by the old regulations. The new regulations should relieve both officials and individuals of much needless expense and annoyance that were unavoidable under the old regulations.

The regulations still require careful disinfection of the premises.

FACTS

Smallpox in Minnesota during last five months of 1907:

Month.	St. Paul	Mpls.	Duluth.	State	Total
August	5	No report	No report	47	52
September	5	No report	No report	46	51
October	89	12	No report	20	121
November	87	56	No report	170	313
December	65	97	*52 (to 12-14)	755**	969
Totals	251	165	52	1,038	1,506

*Records of Duluth incomplete.

**This includes epidemics which occurred in November and December, 1907, not reported by local health officers, but discovered by the State Board of Health inspector at Hampton, New Trier, Vermillion, Triumph, and Monterey.

The above figures demonstrate that smallpox will spread in a non-vaccinated community. The old regulations of the State Board of Health were in force during the above periods, but not enforced in St. Paul, Minneapolis, or the places where our inspector found epidemics enumerated above.

Old state regulations for smallpox required quarantine of entire household with a minimum quarantine of four weeks. Neither St. Paul nor Minneapolis has observed these regulations for years.

Very truly,

H. M. BRACKEN.

The country papers evidently do not fully understand the situation and add to the confusion of lay readers by stating that all quarantine protection is forbidden; whereas, the suppression of an epidemic of smallpox falls upon the local health boards. When the new regulations are better understood the people will see the wisdom of the experiment and will aid the health authorities.

The dangers of an epidemic do not lie with the sick and isolated case, but with the mild or concealed cases. They are the ones that spread disease, and if the new regulations prevent the promiscuous wandering of the carriers of infection they will also call attention to the necessity for the protection of the helpless, the invalid, and children who are frequently exposed through carelessness and ignorance.

One argument against the abolition of quarantine is that children and irresponsible people will be the victims of the disease. The only answer to this is that there must be greater care and thoroughness of the local boards of health, isolation of the sick, placarding of the house, and vaccination of the exposed. Many of the county boards of health of villages and cities other than the large cities of the state, will frame ordinances for their own protection, but it must be fully understood that such ordinances must be carried out to the letter or the State Board of Health will see that they are strictly enforced if found lax in any community.

The State Board, after more than one year of deliberation, consultation, and advice from recognized authorities, decided upon the new order of things. It was not a snapshot conclusion, and there will be no backsliding unless it is found that the local boards are inefficient or do not live up to the spirit of the changed regulations.

SCARLET FEVER IN OUR SCHOOLS

The Health Department of Minneapolis, its commissioner, Dr. P. M. Hall, and the Board of Education are struggling with the question of scarlet fever in two of the public schools in Minneapolis. Incidentally, the people and the Board of Education are learning something of matters pertaining to the health of the public.

Complaints have reached the Board of Education that there was a large number of cases of scarlet fever in the public schools, that children were permitted to return to their school work before receiving their certificates of release from quarantine, and that principals were not notified of the existence of communicable diseases in the homes of children in the public schools.

Health Commissioner Hall went before the Board and showed by his records that there were but eight cases reported, instead of fifty, in the Kenwood school, and he also advised against the closing of this school for the reason that not a sufficient number of cases existed to warrant such a procedure. This is the proper attitude to take, as it is conceded that the closing of a school and the scattering of the children is far more likely to be followed by a widespread epidemic than if individual members who are already infected with the disease are isolated and prevented from exposing others to the disease. Dr. Hall also made the point plain that in the particular district under discussion a large number of a cult who do not believe in the existence of disease at

all, lived and disregarded all rules relative to communicable diseases. This state of affairs not infrequently is found, and a large number of communicable diseases have been traced and found to originate in Christian Science families.

The newspapers and the Board of Education have suppressed these facts long enough, and it is time the general public were educated up to a point of intelligence when they will realize the importance of a prompt suppression of epidemic diseases. Scarlet fever is a disease that is often followed by serious sequelæ, such as blindness, deafness, nephritis, and a weakened heart.

About the same number of cases were reported from the Douglas school.

Every rational means should be employed to minimize the dangers of scarlet fever, and a strict interpretation of health rules and regulations is imperative.

If complainants would consult the Department of Health instead of the Board of Education they would find Dr. Hall ready and willing to do everything necessary for their protection.

If the Board of Education had permitted the medical inspection of schools asked by the inspection committee of the Hennepin County Medical Society, these schools would have been saved the unpleasantness of being obliged to close rooms for fumigation and would have saved about 750 books, which have been ordered burned.

Time and experience are great teachers!

DR. P. M. HOLL, CITY PHYSICIAN

At a special meeting of the Board of Charities and Correction, Dr. Peter M. Holl was elected city physician to complete the unexpired term of Dr. O. E. Linjer, who died a few weeks ago.

Dr. Holl is a native of Minnesota and was born near New Ulm in 1862. He graduated in medicine from Minnesota Hospital Medical College in 1887, and from Bellevue in 1888, and has practiced medicine in Minneapolis since his graduation.

Dr. Holl was assistant city physician under Drs. Chase and Weston for a number of years and is familiar with the executive and selective work required by the occupant of the City Hospital.

In politics Dr. Holl has always been a democrat and has been an active man in his party. His interest in various public matters has been unflagging, and his devotion to the needs of the public is that of a public-spirited citizen.

The duties of the city physician grow greatly

in volume, and now that the City Hospital is so extensive the executive work requires the continuous time of one man.

It is to be hoped that the Board of Charities and Correction will see that the salary of its chief is adequate for his time and its responsibilities. Heretofore the Board has not placed a very high value on the services of the physician in charge of the City Hospital. A competent medical man should receive a salary equal to the earnings of a successful medical practitioner. Will the Board take a more liberal and generous view of the salary question?

Dr. Holl will have the support of a large staff, and his reputation as a practitioner will bring him many friends in his new field.

Dr. Holl is a member of the State Medical Association and of the Hennepin County Medical Society.

NOTICE TO SECRETARIES

Your attention is called to the new work of obtaining information from local societies authorized by the House of Delegates at the Duluth meeting in August last.

The blanks will be furnished by Secretary McDavitt, and the reports will be printed in THE JOURNAL-LANCET as often as required. It is essential that the reports of the meetings of the county and district societies be made with care and accuracy and that the information be as complete as possible. The date of the meeting, the number and the titles and writers of papers, and other information should be carefully recorded.

This new method should unify the various organizations in the state, and, it is hoped, will stimulate the work of the secretaries and incidentally encourage the individual members to attend regularly on the work of the society.

Medical men are prone to neglect society meetings unless there is something of interest, and the best way to arouse enthusiasm is to attend the meeting and assist in the discussions.

The larger societies encourage attendance by the preparation of a program that will attract attention. No society can continuously interest its members if the program is made up at the last moment. Time for the preparation and presentation of papers and clinics, is most desirable. A program that is outlined weeks in advance means work, but the benefits amply repay the labor expended by officers and writers.

CHICAGO'S HEALTH COMMISSIONER

Dr. W. E. Evans, Commissioner of Health, of Chicago, lectured on "Municipal Sanitation" at the People's Church in Saint Paul on January 18th. The subjects treated were, vital statistics of communicable diseases, the housing problem, and the milk supply.

The Pioneer Press, which is usually very careful about its reports of medical topics, misquoted the speaker in a very important matter. When Dr. Evans discussed smallpox he was quoted as saying that "the attitude of the State Board of Health of Minnesota in relation to smallpox makes Minnesota a subject of shame among the people of the nation and intelligent people everywhere." When Dr. Evans read the report he immediately wrote the Secretary of the Board denying the statement credited to him. He did not mention the State Board of Health at all, but said very forcefully that the failure of the State of Minnesota to pass a compulsory vaccination law was a shame and a disgrace.

Evidently the reporter of the Pioneer Press was too late to hear the address and was given false information by some antivaccinationist. A sanitarian of Dr. Evans' standing would not lower his dignity by criticising the action of a state board without carefully investigating all sides of such an important question as the abolishment of smallpox quarantine. Not only has the State Board of Health of Minnesota taken this advanced stand, but North and South Dakota, after a conference with the Minnesota authorities, adopted this ruling and actually put it in force long before Minnesota decided upon a date for its enforcement. In some of the mining regions of Minnesota the local boards of health anticipated the determined action of the State Board, and the experiment has been highly successful. The wisdom of the movement has brought out clearly the fact that where the importance of the rule was understood the people showed their appreciation of an effort to scientifically stamp out an epidemic of smallpox by willingly and cheerfully submitting to vaccination.

When an epidemic of smallpox exists the public turn to the physician for protection, and they soon learn that vaccination is the safe and sane protector. The yaps of the knockers grow faint when smallpox appears on the threshold of a community. The secretary of the antivaccination society firmly believed what he preached, but through some unforeseen circumstance he is just recovered from an attack of smallpox. Fortu-

nately, the members of his family were vaccinated and did not contract the disease.

Minnesota still believes that smallpox is a communicable disease and that all smallpox patients are subject to rules and regulations that govern the spread of all epidemic diseases.

The medical press have commented favorably on the new departure and will wait for the ultimate results.

Sanitarians are in sympathy with the effort of sanitary reformation, and doubtless other states will line up with the Dakotas and Minnesota if the outcome is satisfactory.

Physicians are urged to assist in the education of the people on the subject of vaccination. There may be difficulties at first, hardships perhaps, but in the end vaccination and revaccination will be the better way to eradicate smallpox from any community.

REPORTS OF SOCIETIES

This department is reserved for official reports and news of country and district societies. As the Secretary of the Minnesota State Medical Association is now receiving reports upon blanks furnished by him and pursuant to action taken at the last annual meeting, the department will be much fuller and correspondingly more interesting.

BLUE EARTH VALLEY SOCIETY

The annual meeting was held at Blue Earth, January 16th, with 12 members present. Papers were read by Dr. J. W. Andrews on "Fractures Near the Elbow-Joint," and by Dr. F. L. Durgin on "Angioneurotic Edema, with Report of a Case."

Officers elected for 1908: President, Dr. A. C. Jacobs, Elmore; vice-president, Dr. S. C. Schmitt, Blue Earth; second vice-president, Dr. A. Guillixon, Bricelyn; secretary, Dr. J. A. Broberg, Blue Earth; treasurer, Dr. G. H. Luedtke, Fairmont.

J. A. BROBERG, M. D., Secretary.

BLUE EARTH COUNTY SOCIETY

The annual meeting was held at Mankato, December 30th, with 14 members present.

Officers were elected as follows: President, Dr. J. A. Hielscher, Mankato; vice-president, Dr. J. Theo. Schlesselman, Good Thunder; secretary, Dr. T. C. Kelly, Mankato; treasurer, Dr. Lida Osborn, Mankato; censor, 3 years, Dr. G.

R. Curran; censor, 1 year, Dr. J. S. Holbrook; delegate, Dr. J. W. Andrews, Mankato; alternate delegate, Dr. John Williams, Lake Crystal.

T. C. KELLY, M. D., Secretary.

PARK REGION DISTRICT AND COUNTY SOCIETY

The annual meeting was held at Fergus Falls, January 15th, with 24 members present. Papers were read by Dr. H. M. Bracken, secretary of the State Board of Health, on "What the State Board of Health is Doing and How It Can Be Accomplished"; by Dr. S. Marx White, of Minneapolis, on "Some Chest Diseases—Differential Diagnosis."

Officers for 1908 were elected as follows: President, Dr. L. A. Davis, Dalton; first vice-president, Dr. F. J. Brabec, Perham; second vice-president, Dr. J. G. Vigen, Fergus Falls; secretary-treasurer, Dr. O. M. Haugan, Fergus Falls.

O. M. HAUGAN, M. D., Secretary.

ST. LOUIS COUNTY SOCIETY

At the annual meeting of the St. Louis County Society, held at Duluth on Dec. 17, the following were elected officers for 1908: President, Dr. D. D. Murray, Duluth; first vice-president, Dr. C. B. Lonont, Virginia; second vice-president, Dr. C. R. Keyes, Duluth; secretary-treasurer, Dr. N. L. Linneman, Duluth; delegates, Drs. A. J. Braden, J. M. Robinson, and J. B. Weston, Duluth; alternates, Drs. W. R. Bagley, Homer Collins, and A. C. Taylor, Duluth.

At a meeting of this society, held January 9th, with 24 members present, Dr. S. H. Boyer, of Duluth, read a paper on "Ox Heart."

N. L. LINNEMAN, M. D., Secretary.

STEARNS-BENTON COUNTY SOCIETY

The annual meeting of the Society was held at St. Cloud, January 16th, with 8 members present. Dr. J. B. Dunn, of St. Cloud, read a paper on "Surgical Treatment of Gall-Stones," all the doctors present taking part in the discussion.

The Society is invited to a 6 o'clock dinner on February 20th at the residence of Dr. R. I. Hubert, St. Cloud. The program for the evening will be "Diseases of the Stomach."

Dr. E. Anderson, of Hollingsford, was elected to membership.

Officers were elected as follows: President, Dr. E. J. Lewis, St. Cloud; vice-president, Dr. O. H. Wolner, St. Cloud; secretary and treasurer, Dr. J. C. Boehm, St. Cloud.

J. C. BOEHM, M. D., Secretary.

STEELE COUNTY SOCIETY

The annual meeting was held January 7th, with 4 members present. Dr. F. M. Smersh, of Owatonna, read a paper on "Working Together and the Code."

The election of officers was postponed.

A. B. STEWART, M. D., Secretary.

SOUTHWESTERN SOCIETY

The annual meeting was held at Adrian on January 9th. Dr. W. E. Richardson, the president, was in the chair, and there were 23 regular and 5 honorary members and 5 visiting physicians present.

Papers were read as follows: "Nasal Obstructions," by Dr. J. G. Parsons, of Brookings, S. D.; "Arthritis Deformans," by Dr. Thos. Lowe, of Pipestone; "The Eye," by Dr. J. H. Bong, of Jasper; "Acute Intestinal Obstruction," by Dr. F. M. Manson, of Worthington; and "Pemphigus," by Dr. F. R. Weiser, of Windom.

The Board of Censors reported favorably upon the application of Dr. Wm. T. Leonard, of Beaver Creek, and Dr. Iver S. Benson, Jackson, who were elected to membership.

The application of Dr. G. E. Hoeper, of Mountain Lake, was received.

The next meeting will be held in July, at Worthington, and an invitation to attend it was extended to the wives and the children of the members.

Officers were elected as follows: President, Dr. W. H. Beadie, Windom; vice-president, Dr. C. P. Dolan, Worthington; secretary-treasurer, Dr. Emil King, Fulda; Censor for 3 years, Dr. F. M. Manson, Worthington; delegate, Dr. C. C. May, Adrian; alternate, Dr. Thomas Lowe, Pipestone.

The meeting was a splendid one, the spirit of harmony prevailing. During the course of the evening a banquet was partaken of at the Hotel Slade.

EMIL KING, M. D., Secretary.

WRIGHT COUNTY SOCIETY

A quarterly meeting of the Society was held at Buffalo on January 6th, with 6 members present.

Dr. J. T. Christison, of St. Paul, read a paper on "Pneumonias in Children."

Officers were elected as follows: President, Dr. A. M. Ridgway, Annandale; vice-president, Dr. C. L. Larsen, Buffalo; secretary, Dr. J. J. Catlin, Buffalo; treasurer, Dr. A. L. Hill, Monticello.

JOHN J. CATLIN, M. D., Secretary.

WATONWAN COUNTY SOCIETY

The annual meeting was held at Madelia, December 11th, with 7 members present.

Officers for 1908 were elected as follows: President, Dr. S. Brown, Madelia; vice-president, Dr. A. Thompson, St. James; secretary-treasurer, Dr. B. H. Haynes; censor for three years, Dr. C. O. Cooley, Madelia; delegate, Dr. J. W. McCarthy; alternate, Dr. A. Thompson.

Arrangements are being made for holding the Society's meeting at the St. Peter Insane Hospital during this year.

B. H. HAYNES, M. D., Secretary.

HENNEPIN COUNTY SOCIETY

The annual meeting of the Hennepin County Society was held on January 6th. The president, Dr. J. E. Moore, occupied the chair, and 57 members were present.

The treasurer's annual report was read and accepted and referred to the Executive Committee to be audited.

Summary, Jan. 1st, 1907. Cash on hand:
General fund\$ 322.20
Building fund 240.57

Interest on building fund..... 8.52
Received in fees and dues..... 1,655.00

Total amount on hand and receipts....\$2,226.29

Paid out:
Library 673.47
General 750.30

Total\$1,423.77

Balance on hand Dec. 31, 1907:

General fund\$ 553.43
Building fund 249.01

\$802.54

The committee appointed to draw up a suitable memorial in regard to Dr. Linjer's death reported as follows:

IN MEMORIAM

Dr. Ole Edward Linjer passed from this life Oct. 11, 1907, after a life filled with usefulness in his chosen profession.

Dr. Linjer was born in Vernon county, Wisconsin, June 11, 1861. He moved to Minnesota in 1876, attended the public school and Niles' Classical School at Rochester. He graduated from the College of Medicine and Surgery of the University of Minnesota in 1889. He was a member of the Minnesota State Board of Medical

Examiners in 1905-1906, was assistant City Physician in 1903-4, and succeeded Dr. Beckman as City Physician in 1907.

He was a member of the county, state and national medical associations. He joined the local society on June 17, 1901, and always took an active interest in the meetings and in medical matters generally.

Dr. Linjer was held in the highest esteem by his medical brothers. He was a quiet, unassuming and very approachable man and was much loved by those who enjoyed his close friendship.

RESOLVED, that in the death of Dr. Ole Edward Linjer the Hennepin County Medical Society has lost one of its earnest and faithful workers and the family a loving father and friend.

The Society extends to the family its sincerest sympathy, and be it further

RESOLVED, that a copy of these resolutions be spread on the minutes of this society and a copy be sent to the family.

R. J. HILL, M. D.

J. C. LITZENBERG, M. D.

C. H. BRADLEY, M. D.

On motion the report was adopted.

Dr. W. A. Jones reported for the Committee on School Inspection and moved "that the Hennepin County Medical Society indorse medical inspection in the public schools as begun in the Franklin School, and further urge that the inspection include eventually all the public schools in Minneapolis; and that the inspection idea be indorsed and supported by the Hennepin County Medical Society."

On vote the motion prevailed.

It was moved that the complete report, with the above motion as adopted, be submitted by the committee to the Board of Education. Carried.

Dr. A. E. Benjamin reported for the Committee on Furnishings and Fixtures for the new quarters. The lowest bid for new shelving was \$525. Charts and sketches of the fixtures and shelving were shown.

It was moved that the report of the committee be accepted, and that the committee be empowered, after the necessary funds are raised, to accept the lowest bid for shelving and rostrum and have the work completed as indicated by the sketches shown. Carried.

Dr. W. A. Jones reported for the Committee on City Physician that Dr. Loehrs, Dr. McCallum, Dr. Hall, and Dr. Harrington had filed their names with the committee.

The names of Dr. L. F. Foote and Dr. J. H. Higgins were proposed for membership.

The president, Dr. J. E. Moore, then delivered the annual address.

The election of officers and delegates being in order, the following were elected: President, Dr. F. A. Knights; vice-president, Dr. J. G. Cross; trustees, Dr. H. L. Staples and Dr. T. F. Quinby; members of the Executive Committee, Dr. S. M. White and Dr. H. B. Sweetser; censors, Dr. J. F. Corbett and Dr. C. D. Harrington; delegates, Drs. L. A. Nippert, W. A. Hall, A. E. Benjamin, J. E. Moore, G. G. Eitel, J. W. Bell; alternates; Drs. C. H. Bradley, A. S. Hamilton, J. H. Stuart, W. R. Murray, J. C. Litzenberg, Jakob Hvoslef.

C. H. BRADLEY, M. D., Secretary.

WINONA COUNTY SOCIETY

The annual meeting was held at Winona, January 7th, with 16 members present.

Papers were read on "Medical Treatment of Gall-Stones," by Dr. N. V. Lindsay, of Winona; and on "Discussion of Sanitary Rules," by Dr. H. M. Lichtenstein, of Winona.

Officers were elected as follows: President, Dr. F. H. Rollins, St. Charles; vice-president, Dr. John Steinbach, Winona; secretary, Dr. J. B. McGaughey, Winona; treasurer, Dr. L. H. Munger, Winona; censor for three years, Dr. W. F. C. Heise, Winona. Delegates were not elected at this time.

J. B. MCGAUGHEY, M. D., Secretary.

FOURTH DISTRICT SOCIETY OF SOUTH DAKOTA

The regular meeting of the Fourth District Medical Society was held at Miller on Dec. 11.

There were thirteen members and one visitor present. The president, Dr. O. R. Wright, was in the chair.

No subjects had been assigned to the members, but a very interesting discussion was given on sepsis.

Dr. Robinson reported a case of cellular infection, and emphasized the treatment by Prof. Bier's method.

The following officers were elected for the ensuing year: President, Dr. D. W. Robinson, Pierre; vice-president, Dr. E. B. Taylor, Huron; secretary-treasurer, Dr. S. R. Wallis, Miller; censor, Dr. J. L. Foxton, Huron; delegate, Dr. J. L. Foxton, Huron; alternate, Dr. C. M. Burnside, Highmore.

Covers were laid for fifteen at the Vanderbilt hotel, and the social session was much enjoyed.

S. R. WALLIS, M. D., Secretary.

NEWS ITEMS

Drs. Harris and Herman, of Webster, S. D., have dissolved partnership.

St. John's Hospital, of Kenmare, N. D., was formally opened Jan. 18th.

Dr. J. C. Montgomery, of Michigan, N. D., has moved to Winnipeg, Canada.

Dr. F. N. Hunt, of Blue Earth, was quite severely hurt in a runaway accident last month.

Dr. C. A. Homan, a graduate of the Northwestern Medical College, has located at Emery, S. D.

Dr. J. H. Titus, of Minneapolis, has moved to Osakis, succeeding to the practice of Dr. Cleveland.

As noted in our editorial columns, Dr. Peter M. Holl was appointed city physician in Minneapolis.

Dr. T. F. Rodwell, physician in charge of the Indians at Cass Lake, has been transferred to Tower.

Dr. R. J. Sewall, of Cloquet, has been appointed health commissioner and city physician at Cloquet.

Dr. Joseph H. Cosgrove, State University, '06, has accepted a position in the mining hospital at Taconite.

Dr. E. D. Cowen, of Cottonwood, S. D., has been appointed local surgeon of the Northwestern Railway.

The secretary of the Commercial Club of Denbeigh, N. D., says a doctor will find a good opening at that place.

Dr. A. D. Hard, of Marshall, had both bones of his right arm badly broken in an automobile accident last month.

Dr. John R. Peterson, of Willmar, was married on New Year's day to Miss Thea Sophia Rollefson, of Montevideo.

Dr. Ignatius Donnelly, formerly of St. Paul, but for the past ten years of Butte, Montana, has located in Mankato.

Dr. Heinneman, of Philip, S. D., has been appointed local surgeon of the Northwestern Railway at that point.

We are informed that there is a good opening at Russell (Lyon County) for a man who is willing to do country practice.

Dr. Leda J. Stacy, who has been practicing in Rochester for some time, has accepted a position with Drs. Mayo, Graham & Co.

Dr. A. C. Moffat, of Howard Lake, is doing special work in Chicago. Dr. Leo Chilton has charge of Dr. Moffat's practice.

Dr. J. H. Darling, of St. Peter, before starting for Europe last month, was given a handsome loving-cup by the employes of the hospital.

Dr. James C. Kinkle, a retired physician of St. Paul, died last month at the age of 82. Thirty years ago Dr. Kinkle practiced in Stillwater.

John Till announces that he will not retire from plaster work, but may be found at Somerset, Wis., as usual, in spite of the Wisconsin Board of Medical Examiners.

Dr. F. A. Kiehle, who has been doing Dr. Grinnell's work at Preston for some time, has gone to Seattle, Wash. He will do eye, ear, nose, and throat work exclusively.

The appointment of local surgeon for the Great Northern railway at Marshall has been given to Dr. A. D. Hard, of that place. Dr. Hard is a graduate of Ann Arbor and Jefferson.

Dr. R. D. Campbell, of Grand Forks, N. D., has gone to Europe. His practice will be in charge of Dr. G. M. Williamson, of Ardoch, N. D., who will locate permanently in Grand Forks.

Dr. C. M. Bradley has decided to leave Lake Benton where he worked up a good practice. He leaves simply because the prevailing fees are not "life-saving."

At a special meeting of the Ramsey County Nurses' Association, held last month, Miss Rose Enge was elected president to succeed the late Miss Ida Sweatman.

Dr. DeLorme W. Robinson, of Pierre, S. D., has received the appointment of district surgeon for the Northwestern Railway in the Central Missouri River District.

Dr. George H. Green, a recent graduate of the State University, now located at Medical Lake, Wash., was married last month to Miss Anna Haven Guth, of Valparaiso, Ind.

The opening of St. Michael's Hospital at Grand Forks, N. D., last month, was auspicious in the extreme, and the public by their action promised the institution its heartiest support. The building cost \$100,000.

A significant news item is found in the Iowa newspapers. Dr. E. M. McLean, who went from great affluence to abject poverty because of drink, was the pioneer in the "mail-order-medical-treatment" business.

Dr. K. M. Ferguson, of Southern Pines, S. C., has taken the practice of Dr. H. J. Kobbs, of Scotland, S. D. Dr. Kobbs will spend the winter in the South, and will build a hospital in Scotland next summer.

Drs. Green and Boyden, of Brookings, S. D., have dissolved partnership. They retain offices together, and each uses the hospital formerly conducted by the firm, and now controlled by Dr. Boyden under lease.

At the annual meeting of Asbury Hospital, of Minneapolis, Dr. J. N. Little resigned as chief of staff, and was succeeded by Dr. D. Edmund Smith. Dr. Little remains in charge of the surgical work of the hospital.

Dr. D. B. Collins, of Madison, Wis., who has been very outspoken in his opposition to operation for appendicitis, was himself operated upon a couple of weeks ago after three severe attacks. He may have learned something by the experience.

The U. S. Circuit Court of Rhode Island has decided that a trained nurse performing her usual duties and exercising the skill which is the result of training in her profession, is not a "servant," according to the legal meaning, but is one rendering personal service in an independent calling.

The annual meeting of the Sheyenne Valley Association (N. D.) was held on Dec. 26th at Valley City, N. D., officers were elected as follows: President, Dr. W. C. Nolte, Dazey; vice-president, Dr. A. W. Macdonald, Valley City; secretary, Dr. Jacob VanHouten, Valley City.

Dr. W. H. Pratt has retired from the practice of medicine, and is now visiting at Fort Sill, Oklahoma. Dr. Pratt came to Stillwater thirty-eight years ago, and has become known and loved in a multitude of households in and near that city. He was wounded in the battle of Fredericksburg, and never entirely recovered.

The Sixth District Association of North Dakota met at Dickinson, N. D., on Dec. 17th. Officers were elected as follows: President, Dr. C. L. Chambers, Bismarck; vice-president, Dr. W. H. Bodensstab, New Salem; secretary-

treasurer, Dr. Jacob Bursma, New Salem; delegate, Dr. V. H. Stickney, Dickinson. A resolution was passed condemning all non-ethical advertising.

The following physicians were licensed at the North Dakota January examinations to practice in that state: L. H. Johnston, Lignite; H. N. Klein, Hebron; N. O. Sandorn, Park River; T. M. Yeomans, Lansford; P. S. Vistanneet, Bismarck; H. B. Blanchard, Bottineau; D. A. Fish, Sparta, Wis.; G. P. Stokes, Fullerton; H. C. Erickson, Towner; J. F. Mann, Bowman; E. B. Ceasly, Oriska.

At the annual meeting of the Houston-Fillmore County Society, Dr. John T. Dunn, of Wykoff, was elected president, and Dr. O. F. Fischer, of Houston, was re-elected secretary. Dr. Wm. E. Browning, of Caledonia, who had served four years as president, refused re-election. He gave the Society a venison dinner at the Caledonia Hospital. A report that Dr. Browning shot the deer gained some credence.

At the annual meeting of the Swedish Hospital staff of Minneapolis, held last month, the following officers were elected for the coming year: Chief of staff, Dr. F. A. Dunsmoor; secretary, Dr. O. A. Olson. Dr. J. Frank Corbett was placed on the staff and was given charge of the pathological department. The Board of Trustees have made an appropriation for the purchase of a first class x-ray coil for the hospital. The selection of internes for the coming year will take place some time next month, the exact date to be announced later. They will be selected by a strictly competitive examination. Four internes are to be selected for the coming year.

OFFICE POSITION WANTED

A trained and experienced nurse desires a position in a physician's office for clinical work or as office nurse. Position in a large western city preferred. Best of references. Address R. M., care of this office.

FOR SALE

Being obliged to retire from practice because of poor health, I will sell a high-grade surgical or gynecological chair, made in Indianapolis, and just as good as new. Address Dr. C. E. Lundgren, care of C. A. Peterson, Harris, Minn.

PRACTICE FOR SALE

I will sell my practice in Minneapolis for a

moderate price, as I am going to the coast. No better location can be found in the city, especially for a physician coming from the country. Address W. S., care of this office.

PRACTICE FOR SALE

Good country practice in village of 600 inhabitants near Chisago Lake (not far from the Twin Cities). Population 600; mostly Scandinavians. Office has been used by physicians for 22 years; rent cheap. Address T. L., care of this office.

PRACTICE FOR SALE

Splendid opportunity to acquire a \$6,000 Minneapolis City practice. Office furnishings, medical appliances, and apparatus cost \$3,500. I am leaving the city to engage in other business on the Pacific Coast, and will sell the furnishings, appliances and apparatus for 25 per cent less than cost, and throw in the good will and practice if transferred soon. Address S. M., care of this office.

TO THE PROFESSION—X-RAY LABORATORY

I have a well equipped x-ray laboratory, rooms 214-218 American National Bank Building, corner Fifth and Cedar streets, and am prepared to do your radiographic or Roentgen-ray therapeutic work.—W. S. FULLERTON, M. D., St. Paul, Minn.

PHYSICIANS' ATTENTION.—Drug-stores on easy payments, etc. Drug-store positions, United States or Canada. F. V. Kniest, Omaha, Nebr.

DOCTOR: If you want practical post-graduate work during fine season in the delightful city, write for particulars. New Orleans Polyclinic, P. O. Box, 797, Post-Graduate Department, Tulane Medical College.

We desire to remind our readers again that we earnestly urge them to send us items about themselves and acquaintances for this department of THE JOURNAL-LANCET. We know our readers enjoy this column, and often find in it information of real interest and value, and why should they not contribute to it, and contribute items about themselves even? If anyone fears he may overstep the bounds of modesty in so doing, we assure him that we have in our office an anti-immodest blue pencil, and it will kill all germs dangerous to reputations.

We are much pleased to have an increasing number of such notices coming to us, and we are always grateful for them.

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INGUINAL HERNIA—TYPES OF OPERATION—RESULTS IN 1,652 CASES*

By E. S. JUDD, M. D.

ROCHESTER, MINN.

Within the past sixteen years, 1,652 operations for the radical cure of inguinal hernia have been performed in the clinic at St. Mary's Hospital, Rochester, Minnesota.

In the 1,429 persons operated upon, 1,310 were males and 119 females. Although all trades and occupations were represented, by far the greater number of these patients were farmers and day-laborers. The youngest patient operated upon was three weeks old, the oldest nearly 90 years of age. Both were operated upon for the relief of strangulation. Eighty of the patients were under 5 years of age, 127 between the ages of 5 and 20, 992 between 20 and 50, and 230 were over 50 years of age. Of this number 728 were right-sided, 426 left, and 230 double. Many of these patients had worn a double truss where only a single hernia existed. This fact may account for the larger percentage of double hernia than is reported by Coley and Stiles, who have confined their work to children.

VARIETIES

Fortunately, the oblique or external variety, with the neck of the sac lying external to the deep epigastric artery, forms the greater bulk of cases, as they are easier to repair and are not so apt to give trouble later. Of these 1,652 cases 1,451 were of this variety. There were 183 direct hernias, including all of the anatomic direct, having the neck of the sac in the internal fossa, and the type which begin as oblique and,

through gradual increase in size and the constant pressure of a truss, are so changed that the rings almost overlie each other. In addition to these, there were 14 cases that were essentially direct hernias, but they were in a class by themselves, in that they contained the bladder. This particular class of cases is interesting, not only from the fact that they contain the bladder, which could easily be injured during operation, but because it is the type most difficult to repair, and gives the largest percentage of recurrences, with the possible exception of the sliding hernia. In one instance the bladder was opened during operation, but the condition was recognized immediately and the wound closed with drainage, the patient recovering with a cure of the hernia.

Of the interparietal variety there were 5 cases, 1 preperitoneal associated with undescended testicle, in which the protrusion was toward the bladder. This was the only case under 20 years of age that relapsed. The sac was not properly cared for; the relapse was noticed as soon as the patient was allowed to be up. The operation for recurrence was performed a few weeks later, and the patient has remained well for a year. One case was interstitial, the sac lying between the internal and external oblique muscles. The remaining 3, 1 of which was double and 1 single, were superficial. In each instance the sac came out of the external ring and turned up over the aponeurosis of the external oblique, the testicle lying just outside of the external ring.

There were 14 sliding hernias in the series; 8 on the left side involving the sigmoid, and 6 of

*Read before the Minnesota State Medical Association, August 13 and 14, 1907.

the cecum on the right side. These were not all complete, as several of them had a small sac of peritoneum on the inner side and a sliding of the intestine through the internal ring on the outer side. In some of them there was no peritoneum at all. Three of these cases recurred through mistaken judgment in attempting to repair them without transplantation of the cord.

Congenital inguinal hernia, in the strictest sense, is very uncommon. In 112 of these 1,652 cases there was no apparent attempt at obliteration of the vaginal process, and at the time of operation there was direct communication between the tunica vaginalis and the peritoneum. There is no mention in the histories of the protrusion at the time of birth. In all probability many of the sacs are congenital and have be-

three months to a year after operation for appendicitis. There have been about twelve of these cases in this clinic within the past two years. Although these operations for appendicitis were performed by various operators, the gridiron incision was the one usually employed. The question arises as to whether the disturbance in the nerve supply to the internal oblique in doing the appendectomy had not caused an atrophy of the muscle, and thus weakened the inguinal region.

Barring accidents, such as pneumonia, emboli, and sepsis, there should be no mortality in the operation for the radical cure of inguinal hernia. One of the above series died of pneumonia, one of pulmonary embolism, and one of sepsis. Of 38 strangulated and 11 incarcerated, 3 strangulated were fatal. Each of these three cases required extensive intestinal resection, and were in old people.

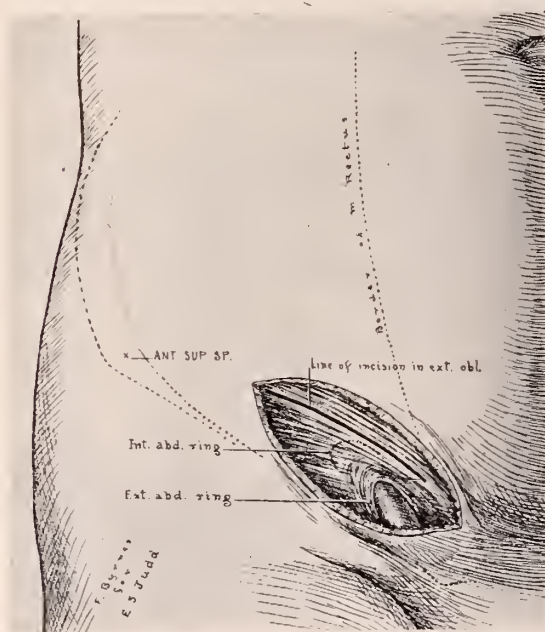


Fig. 1. Line of incision in external oblique muscle.

come hernias later in life. The obliteration of the vaginal process begins near the central portion and normally extends in both directions so that the peritoneum and tunica vaginalis are separated from each other, but that part of the vaginal process between the starting-point of obliteration and the internal ring may remain as a congenital sac. One point that may distinguish a congenital sac from an acquired sac is the condition of the fibrous ring at the neck. In the acquired variety this would not be a firm fibrous ring, but, rather, the irregular scar of torn tissue.

Attention has recently been called to the number of right inguinal hernias which develop from

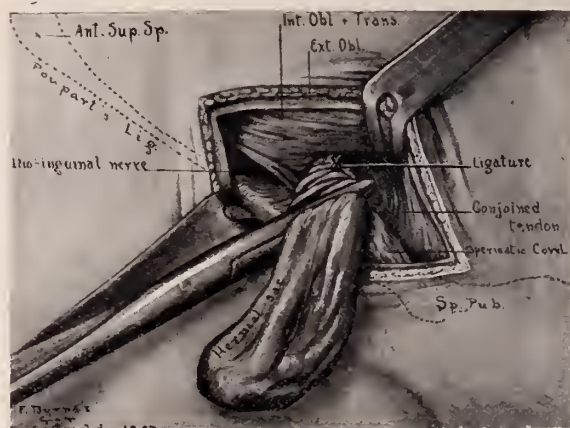


Fig. 2. Showing twisting of hernial sac.

RECURRENCES

Seventy per cent of all recurrences came within the first six months, and 90 per cent within the first year. Of the 42 recurring cases, 25 were our own, and 2 of these required a third operation. The other 18 cases had their operation elsewhere.

The simple anatomic operation without cord transplantation was performed 1,241 times, and so far as these cases can be traced there have been 21 recurrences. A few of these came from infection, but the greater number came from trying to make this operation do for all classes of cases. Three of these recurrences were in sliding hernias, 2 in bladder hernias, and 5 in direct hernias. The recurrence invariably came along the cord and showed just above the pubic bone.

Of 411 operations with cord transplantation

there were 4 recurrences. In all but one the recurring protrusion came above the internal ring. In this one case there was a small opening at the lower angle and recurrence at this point. It will be seen that the percentage of recurrence was less than one where the cord was transplanted, and over one where it was not transplanted; therefore we might conclude that the cord should be displaced every time. This, however, is not so, as the simple anatomical operation, leaving the cord and testicle as nearly undisturbed as possible, is the operation of choice. This method restores the anatomy of the region and will be attended with a low percentage of recurrence if properly employed.

The strength of the closure depends almost entirely on the internal oblique muscle, it being the only structure in this region with abundant blood and nerve supply. In an individual with

of recurrence is transferred from an atrophied tendon to a good body of muscle. This procedure is not necessary in the ordinary oblique rupture, as good muscle extends the entire distance to the conjoined tendon.

Technic.—An incision is made through skin and superficial structures from a point one inch above the internal ring to the external ring, not extending to the scrotum. The superficial veins are clamped and cut, and the external ring located. The aponeurosis of the external oblique is incised parallel to the line of its fibers at a point just internal to the internal pillar of the external ring, and the incision is continued well up over the internal ring. The external ring is left intact except in the large irreducible hernias. Poupart's ligament is cleared well down with a piece of gauze or blunt dissector so that the lowest part of the shelving edge is exposed.

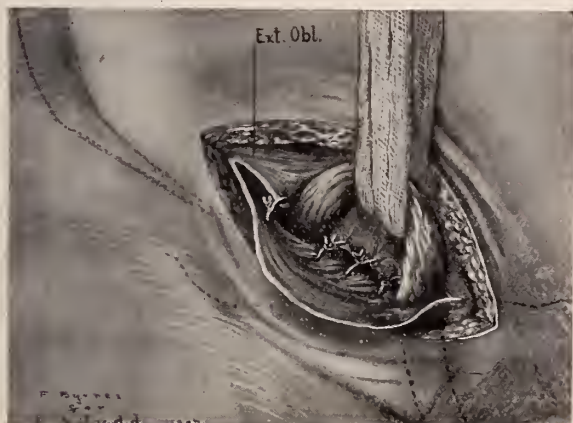


Fig. 3. Showing method of transplanting the cord.

oblique rupture this muscle differs from the normal in its short line of origin from Poupart's ligament, although it passes inward as a good heavy muscle and unites with the transversalis to form the conjoined tendon.

If the rupture is direct to start with, or has become so from long standing and crowding of a truss (bladder hernia), or if there is a great deal of fat along the cord, as is seen in fleshy people with overhanging abdomens, the internal oblique will have its same origin from Poupart's, though its fibers at the point of union with the transversalis will be so atrophied and thinned out by pressure that in the extreme cases there is almost an obliteration of the conjoined tendon. Knowing that the most likely point of recurrence is along the cord, it is not reasonable to have the cord supported by the thinned out muscle, and in this class of cases the cord should be transplanted. In so doing the possible point

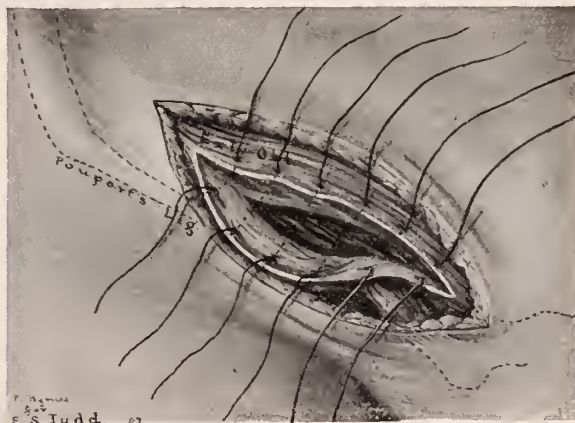


Fig. 4. Deep stitches placed in the simple operation.

The weak point is readily located with the finger near the internal ring, the cremaster and transversalis fibers separated with a pair of blunt forceps, and the neck of the sac grasped. As soon as the sac is separated from the surrounding structures by brushing them back with a piece of gauze, a small opening is made in the neck, and one finger slipped into it makes the rest of the dissection quick and easy and without danger to the cord structures. Adherent structures inside the sac are attended to; the omentum is saved as much as possible. It will sometimes help in reducing intestine or omentum to twist the sac, beginning at the distal point. After the contents are reduced the twisting is continued, and in this way the peritoneum tracted well out. Crushing the neck before ligating breaks the intima of the vessel and starts early healing. The neck is then ligated, the ligature passing through the neck to prevent its slipping. An

examination of the internal oblique muscle decides whether or not to transplant the cord.

If the anatomic or simple operation, which is in principle the Ferguson, Andrews, or Girard, is performed, in many instances the cord structures will not be visible at any stage of the operation. The deep sutures of plain heavy catgut are started at a point just above the internal ring, and pass through the internal flap of the aponeurosis of the external oblique, taking a good bite into the internal oblique and transversalis, and then pass across to a low point on the shelving edge of Poupart's ligament. Three or four of these stitches will be sufficient in most

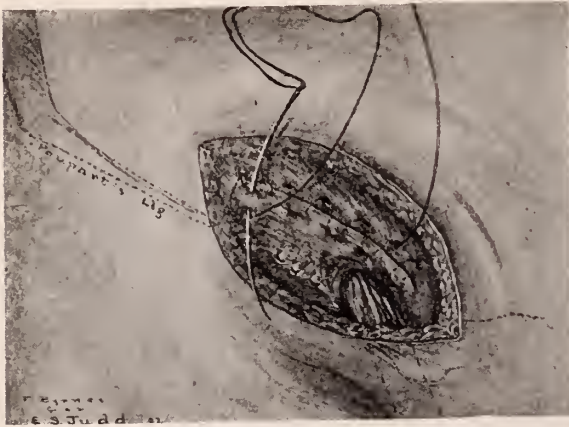


Fig. 5. Method of overlapping the aponeurosis of the external oblique.

cases. The lowest stitch is under the external ring and is made so that it allows just room enough for the cord to pass without constriction. The stitches should avoid the ilio-inguinal nerve, and be tied only tight enough to approximate the muscle and ligament. The external oblique aponeurosis is caught in these stitches to help hold the internal oblique over and so strengthen the entire area and also help in the imbrication which is the next step.

The principle of imbrication is taken from the operations of Lucas Championniere and Andrews, and is accomplished by placing the external flap of the aponeurosis of the external oblique (which continued outward is Poupart's) over the internal flap, and suturing these so as to get a surface instead of an edge-to-edge union. The internal pillar of the external ring is set in far enough to fold the external ring to the proper size. This flap is caught into place by two or three stitches of heavy catgut. The superficial fascia is closed with a running catgut, each stitch dipping through the two flaps of aponeurosis of the external oblique, making a running

mattress stitch as well. The skin is closed with the same catgut, subcuticular.

In case the type of operation with transplantation of the cord (Bassini or Coley) is decided upon, the cord is separated freely from the surrounding structures and held aside with a piece of tape, and exactly the same structures approximated with the deep sutures, as in the simple type, except in this case the suturing is done posterior to the cord, and in addition one stitch is put above the cord to fold the muscle onto Poupart's at this point. In many operations of this type it will be necessary to open the sheath of the rectus, and catch this muscle in the lowest stitches, in order to close well the lower angle. It is very essential that the deep stitching continue to the pubic bone, and so, according to Bloodgood, the occasional use of the rectus, where the conjoined tendon is obliterated. In imbricating the flaps of the external oblique aponeurosis, the cord structures lying on the first row of stitches must be avoided.

In the female the round ligament is not transplanted. One deep stitch passes half through the ligament to prevent its slipping and losing its support to the uterus. Otherwise the technic is identically the same as the simple operation in the male.

The wounds closed, subcuticularly, are dressed with dry sterile gauze and adhesive straps. The simple type of cases will remain in bed eight or nine days; the fleshy subjects or those with direct hernia, ten to twelve days. Any support that makes pressure over the healed incision is dangerous, as it will tend to separate and produce atrophy of approximated tissues, and so every patient is advised against the use of a truss. The very fleshy individual with a large abdomen will feel more secure with an abdominal supporter, and this does no harm.

DISCUSSION

DR. H. B. SWEETSER (Minneapolis): The question as to whether or not the cord should be transplanted is a debatable one still. Personally, I am best satisfied with the Bassini operation. If the internal oblique muscle is weak and thin, a good strong wall may be formed by bringing over the edge of the rectus tendon and suturing it to Poupart's ligament. Where relapses have occurred, and especially in old people, removal of the testicle and cord eliminates a weak spot and gives a stronger wall. I was much interested in his cases of inguinal hernia following operations for removal of the appendix. Whether this is post hoc or propter hoc, I heartily agree with the essayist in his statement, that we ought to be more particular than we are in interfering with the nerve supply of the abdominal muscles. Inasmuch as appendectomy operations are so common, this point ought to be easy of determination.

DR. W. H. MAGIE (Duluth): I was much interested in Dr. Judd's paper, particularly in the statement that the bladder is often found in inguinal hernia. This complication I have found present in several cases. I now recall a case in which I operated for the family physician for what was supposed to be a strangulated hernia. On opening the sac there was a discharge of pus. We dissected out the supposed sac and in doing so accidentally opened the bladder. The wounded bladder was repaired by stitching; then an effort was made to detach the adhered bowel. We succeeded in freeing a piece of bowel that appeared to be the ileum. This piece was pulled out through the wound until we had delivered about six inches of the bowel. By this time the patient was in a very serious condition from shock. The operation was consequently abandoned, and the open end of the bowel ligated and fastened into the wound, and the wound drained. The patient rallied, however. Before removing her from the table we discovered that she had a very advanced stage of breast cancer. This fact had been concealed from the attending physician; and consequently we did not feel so badly about our operation being a failure.

About this time—I believe it was the next day—I was attending the annual meeting of the State Medical Association at St. Paul when I received a telegram from the attending physician stating that the patient was still alive. To this I replied that I was glad to hear that she was doing so well. Next day I had another message from the physician saying that she was getting well and that he was getting alarmed, as we had told the relatives that there was no possible hope for her recovery, and that he feared if she recovered it would reflect upon us. On my return to Duluth we visited the patient together and found her doing well, which caused me to express the opinion that she would recover. Then the doctor said, "How can she get well with her gut tied?" I replied, "I don't know." Then he replied, "If we had not been so emphatic in our

prognosis I would not care so much, as we had told her people that she was going to die." Then I remarked that even that was better than telling them that she was going to live and then have her die. I pacified him with some difficulty and later came to the conclusion that we had tied the free end of the Meckel's diverticulum that had become incarcerated in the inguinal canal. The patient recovered from the operation, but died some months later from cancer of the breast.

DR. G. C. BARTON (Minneapolis): I had what to me was rather an interesting case of inguinal hernia in a child about five years old. I first saw it when strangulated, and I reduced it under anesthesia. The parents at that time refused operation, and the child was fitted with a truss. This was about a year ago. Two or three weeks ago the father telephoned me at night that the child had had a recurrence of the hernia, and that they could not get it back. He brought the child in the next day, and there was an irreducible mass in the inguinal canal. It did not feel to me like omentum or bowel. The same afternoon I operated on the child and found a cyst attached to the end of the hernial sac, which extended down into the scrotum. The cyst was not a hydrocele of the cord, but was attached to the hernial sac and had developed after the child commenced to wear the truss. It seemed to me quite a peculiar condition.

DR. EDWARD S. JUDD (Essayist): There was one of these cases in which the contents of the sac was a Meckel's diverticulum. There was no strangulation. The condition was easily recognized and corrected at the time. The size of the incision in the appendix cases which developed hernias later seemed to play no part, as one of the cases was a boy in whom an appendectomy had been done through an exceptionally small incision. Possibly the operation for appendicitis had nothing to do with the occurrence of hernia later.

THE PRESENT STATUS OF SMALLPOX IN MINNESOTA

By H. M. BRACKEN, M. D.

Secretary State Board of Health

ST. PAUL

A deluge of criticisms against the Minnesota State Board of Health for making less stringent the regulations relating to the control of smallpox has been flooding the papers throughout the state. This was to be expected. Old-time confidence in quarantine as a means of controlling smallpox is not to be easily overthrown. The present epidemic of smallpox has been seized by the critics of the State Board as an additional argument against the new regulations. But this is a mistake. In fact, the critics are playing with a boomerang. The present epidemic of smallpox began in the fall of 1907, giving a record of cases for the last five months of that year as follows:

District	Aug.	Sept.	Oct.	Nov.	Dec.	*Special	Total
St. Paul	5	5	66	110	65	29	280
Minneapolis	No report	..	..	68	82	75	225
Duluth	No report	..	..	19	34	25	78
State	....47	46	55	135	637	240	1,160

The first three districts represent the cities of the first class in the state, showing a total of 583 cases against a total of 1,160 cases for the rest of the state, covering the same period of time. The record of the state cases does not include eight epidemics in villages representing 265 cases, but not reported to the State Board.

The total number of cases for these five months was 2,008
Total for first seven months of 1907.... 1,588

*These cases were infected in December, but did not break out until the early part of January.

Grand total for year 3,596

The records of smallpox cases and deaths reported to the Minnesota State Board of Health by years are as follows:

Year.	Cases.	Deaths.
1899	257	11
1900	1,371	22
1901	8,485	43
1902	8,666	29
1903	4,502	55
1904	1,920	35
1905	2,097	9
1906	1,920	6
1907	3,331	13
Total.....	32,549	223

It is a conservative estimate to place the total number of cases of smallpox in Minnesota during these nine years, including the unreported cases, at 50,000. There were probably no unreported deaths. The above record of smallpox was made in spite of the strenuous regulations of the State Board of Health, which called for—

1. The quarantine of the patient and all those who had the care of, or came in contact with, such patient.

2. A minimum quarantine for each case of four weeks; the final quarantine period to date from the appearance of the disease in the last case of a family or household.

3. A quarantine of all unvaccinated people known to have been exposed to smallpox for a period of three weeks from the date of last exposure, except as provided under 5.

4. The detention of unvaccinated people in a quarantined house for a period of two weeks beyond that required for the last smallpox case, if they had not had smallpox and after the disinfection of the house.

5. The release of persons found in a house with a smallpox patient if vaccination was possible and submitted to within forty-eight hours of first exposure.

6. Disinfection of the premises and contents before final release of quarantine.

7. Prohibition of sale of dairy products from a place so long as it is under quarantine.

The record of smallpox cases given above would seem to support the State Board of Health in its contention that smallpox cannot be controlled by any system of quarantine without compulsory vaccination. It would also seem to demonstrate the need of compulsory vaccination laws. It has been said that the State

Board of Health passed its new regulations relative to smallpox with the intent of compelling vaccination. This is true to a certain extent. The Board thought that the people would be vaccinated as a means of self-protection when advised of the responsibility resting upon them, in order to prevent infection from smallpox. So far as one can judge, the Board was right in this surmise, for there has been more vaccinating in Minnesota since January 1, 1908, than at any other time probably since smallpox first appeared as an epidemic in the state, nine years ago. One health officer, in speaking of the result of the new regulations, says: "Your Board is accomplishing what it intended to do so far as is concerned. Judging from the amount of vaccine sold, not less than 1,500 people have been vaccinated here during the past four weeks, and still they come. If they are doing as well in other parts of the state, we shall soon be able to speak of the late epidemic of smallpox." This letter was dated Jan. 22, 1908.

There is no compulsory vaccination law in Minnesota. Prior to 1903 the State Board of Health was given authority to require vaccination under certain conditions. (Sec. 7045, Gen. Stat., 1894.) The law also placed a certain responsibility on individuals, for Section 7069, Gen. Stat., 1894, reads as follows:

Every person, being the parent or guardian, or having the care, custody, or control, of any minor or other person, shall, to the extent of any means, power, or authority of said parent, guardian, or other person, that could properly be used or exerted for such purpose, cause and procure such minor or person under control to be so promptly, frequently, and effectively vaccinated, that such minor or individual should not take, or be liable to take, the smallpox.

Acting under these former laws there was a possibility of securing quite general vaccination and of excluding unvaccinated children from school, especially when smallpox prevailed in a place or locality.

In 1903 the antivaccinationists of the state secured the passage of a bill of which they are very proud, which reads as follows:

Hereafter it shall be unlawful for any board of health, board of education, or any other public board or officer, acting in this state under police regulations or otherwise or under any general law or city charter, however adopted, to compel or require, by resolution, order, ordinance, or procedure of any kind, the vaccination of any child, or to make vaccination a condition precedent to the attendance at any school in the state of Minnesota, or to exclude

any child or other person from attendance on any school in this state on account of the fact that such child or person shall not have been vaccinated. Except in cases of epidemic of smallpox such boards of health and boards of education may, by joint action, require such vaccination by a duly licensed and practicing physician, to be selected by the person to be vaccinated; provided, that any child may be exempted from the provisions of this act where a reputable physician certifies in writing that on account of said child's physical condition such vaccination would be dangerous to the health of said child. (Chap. 299, Laws of 1903.)

This antivaccination law quite changed conditions in Minnesota so far as it relates to the protection against smallpox. But in the revision of the statutes of 1905 the law-makers still further curtailed vaccination by withdrawing all such authority from local boards of health or boards of education under any conditions whatever. The revised laws place the responsibility of formulating regulations relating to vaccination solely on the State Board of Health; but even in giving this authority to the State Board, the law-makers gave to the local boards of education power to nullify the regulations of the State Board of Health. This law reads as follows:

The (State) Board may adopt reasonable regulations relating to the furnishing of vaccine matter; the assembling, during epidemics of smallpox, with other persons not vaccinated. But no rule of the State Board, or of any public board or officer, shall at any time compel the vaccination of a child, or shall exclude, except during epidemics of smallpox and when approved by the local board of education, a child from the public schools for the reason that such child has not been vaccinated. Any person thus required to be vaccinated may select for said purpose any licensed physician, and no rule shall require the vaccination of any child whose physician shall certify that by reason of his physical condition vaccination would be dangerous. (Revised Statutes, 1905, Sec. 2131, Subdivision 8.)

Naturally the State Board of Health was not greatly interested in passing a regulation that could be set aside by a local board of education, and no regulation under this law has yet been formulated. There is therefore absolutely no compulsory vaccination in Minnesota, thanks to the antivaccinationists and their friends in the legislature.

As stated at the outset in this paper, the State Board expected criticisms on its new regulations relating to smallpox, but it did not expect such criticisms from physicians, for it was thought that such individuals would at least make themselves familiar with the laws of the state before taking sides against the Board of Health with the antivaccinationists.

In this the State Board is disappointed. In the issue of the Pioneer Press, under date of January 19, 1908, Dr. W. A. Evans, Commissioner of Health, Chicago, is quoted as criticising the Board as follows:

The attitude of the State Board of Health of Minnesota in relation to smallpox makes Minnesota a subject of shame among the people of the nation and intelligent people everywhere.

This appears in the paper as a quoted statement. To this I replied in the following day's issue of the Pioneer Press that if the paper quoted Dr. Evans correctly he was presenting the opinion of one man on conditions with which he was not familiar against the opinion of nine men who were thoroughly familiar with the smallpox conditions they were acting upon. I stated further that the provocation would be very great indeed before any member of the Minnesota State Board of Health would arraign the work of Dr. Evans as Health Commissioner at a public meeting in Chicago as Dr. Evans had arraigned the Minnesota State Board of Health at a public meeting in St. Paul. The sentiment published in the Pioneer Press as representing Dr. Evans' views has furnished an abundance of fuel for the antivaccinationists and their friends in still further criticising the State Board of Health on matters with which they are not at all familiar. The day following that on which Dr. Evans was quoted as criticising the State Board of Health of Minnesota (Jan. 20th), he wrote me as follows:

I want to begin (my letter) by disclaiming responsibility for a statement in the St. Paul papers of yesterday to the effect that I had criticised the State Board of Health of Minnesota. I did not mention this Board at all. I did criticise the state of Minnesota for its attitude on the subject of vaccination without making any reference to your Board.

I thereupon wrote Dr. Evans, asking if he was willing to make such a statement as the above for publication in the Pioneer Press. To this he replied under date of Jan. 25th: "I will send the St. Paul Medical Journal on Monday an article on preventable diseases, in which I will attempt to reproduce, as nearly as I can, what I said at St. Paul." There has therefore been no public denial on the part of Dr. Evans of the quotation attributed to him by the Pioneer Press of Jan. 19th. The February issue of the St. Paul Medical Journal has appeared, but nothing from Dr. Evans on the subject is given. The only thing on the subject in said journal was a critical editorial

which will give the antivaccinationists additional comfort.

One of the newspapers from a smaller city in Minnesota, while criticising severely the State Board of Health, gives good advice, for it says: "Vaccination is now the only protection that people have, and they should hasten to get into the immune class." That is exactly what the State Board is advising.

To give a general idea of the criticisms of the lay press I will quote further from this same paper, as follows:

Since the removal by the State Board of Health of the quarantine for smallpox, the disease is spreading as never before in this state. If evidence was needed to show the rashness of the Board in this act, it is at hand in abundance. It would seem now that in the widespread hold the disease has gained, the only sensible thing to do is to have every member of the household vaccinated, and that, too, without delay.

As already shown, this paper is wrong in placing the responsibility of the present epidemic upon the new regulations, for the epidemic, began and probably reached its highest mark, in December, under the old regulations.

The present hardly seems opportune for criticising the State Board of Health's new regulations. The Board gave this subject careful consideration during a period of nearly two years before the date upon which the new regulations were to go into effect. The Board gave warning of its proposed action. Either the critics should have begun their work before the new regulations went into effect, or they should have waited a few months to see what the results would be under them. The antivaccinationists need not take to themselves the above criticism, for they were busy with their opposition to the proposed action of the State Board several months before the date fixed for the new regulations to go into effect.

In writing of smallpox in Minnesota it must not be supposed that conditions in this state are worse than in other states. Smallpox of mild type has prevailed unchecked, although quarantined, throughout a great part of the United States during the past twelve years. Minnesota will bear comparison with her neighboring states so far as relates to her efforts to control smallpox.

It is no wish on my part to start a controversy with the antivaccinationists on smallpox statistics; but there is one point deserving of notice. An attorney and alderman of Duluth recently quoted at an open council meeting in Duluth from the Encyclopedia

Britannica to prove that there was more smallpox in Germany, a compulsory vaccinating country, than in Austria, a non-vaccinating country. I presume he thought it quite safe to quote antivaccination arguments from the Encyclopedia Britannica, but it was not. His quotation simply demonstrated the danger of playing with statistics, especially when one is trying to prove something that is not true. The figures quoted by him were for 1871. The compulsory vaccination laws, of which Germany is so proud, did not go into effect until 1874. Probably it was the unsatisfactory smallpox conditions in Germany during 1871, 1872, and 1873 that helped to bring about the passage of the 1874 law. The statistics for Germany and Austria tell a very different story from that of the quotation of but a single year (1871) used by this gentleman. They are as follows:

Smallpox Deaths Per Million Population

Year.	Before the Law of 1874				Austria.
	Prussia.	Bavaria.	Wurttem- berg.	**German Empire.	
1866	620	120	133		368
1867	432	250	63		484
1868	188	190	19		370
1869	194	101	74		374
1870	175	75	293		293
*1871	2,432	1,045	1,130		1,866
1872	2,624	611	637		3,094
1873	356	176	30		1,725
1874	95	47	3		
(Since the law of 1874 went into effect.)					
1875	36	17	3		576
1876	31	13	1		406
1877	3.4	17	2		555
1878	7.1	13	0		631
1879	12.6	5	0		534
1880	26	12	5.6		674
1881	36.2	15	3.6		807
1882	36.4	12	6.6		947
1883	19.6	6	35.2		596
1884	14.4	1	11.6		530
1885	14	3	0		600
1886	4.9	1	1	4.2	400
1887	5	1.8	0	3.5	417
1888	2.9	3.8	0.5	2.3	615
1889	5.4	5.2	0	4.1	537
1890	1.2	1.5	0	1.2	249
1891	1.2	1.2	0	1	287
1892	3	0.5	0	2.1	256
1893	4.4	0.7	1	3.1	244
1894	2.5	0.3	0	1.7	105
1895	0.8	0.2	0	0.5	49
1896	0.2	0.2	0	0.2	36
1897	0.2	0	0	0.1	61
1898	0.4	0.3	0	0.3	
1899				0.5	

The action of this attorney in quoting only the year of 1871 is in line with the general methods of antivaccinationists. If he had quoted 1872, 1873, and 1874 the figures would not have been so much against Germany and in favor of Austria. But in quoting antivaccination statistics for Germany under its present law, one should not go back to 1875. The statistics from that time on are surely strongly in favor of Germany's vaccination laws.

*The year from which statistics were quoted.

**Statistics began in the year 1886.

MEDICAL FEES*

By S. M. HOHF, M. D.

YANKTON, S. D.

"Reward or compensation for services rendered or to be rendered; especially, payment for professional services, of optional amount, or fixed by custom or laws; charge; pay; as, the fees of physicians and lawyers."—Webster.

I submit, very briefly, for your consideration to-day the subject of fees, together with its definition, first, because of its pertinence; secondly, because the reward or compensation for services rendered is of vital importance to us as practicing physicians, since it is by our fees, however established, that we live.

That the question of fees has ever been a hard one for the medical profession, is due, primarily, to the fact that no one is a better judge as to the value of his services than the physician himself. And this latitude having been allowed him, I believe, even by the courts of the land, he has been found wanting, and very delinquent, because of the nature of his work in the discharge of this, his duty; second only, in importance to him, to that of healing the sick. Again, that the reward or compensation of the physician has often been more optional with the patient than to the wise discretion and forethought of the doctor, as is well known to you. Therefore, we have at the present day the medical profession the poorest paid of all professions, and paid entirely out of proportion to the outlay in its attainment and the responsibilities involved. As stated, this is probably partly due to the peculiar nature of the physician's work. His judgment and activities are so diverted, both by education and environment, that the subject of fees—or, in short, the business side of his profession—is shamefully neglected, and in some localities it is little short of ruinous to the practice of medicine.

We are pleased to note, in this connection, that the wide agitation now going on in medical journals is fundamentally for the purpose of aiding the general practitioner along these lines, by creating an awakening among the rank and file of physicians to a realizing sense of the need of a higher standard of fees, also that this increase may be brought about legitimately by the family physician and without material injury to anyone.

The family doctor is to be emphasized in this regard because it is through him that this work must be done. He is the most important be-

cause the most numerous, as well as the most neglected, class of the profession; and he is to be distinguished from the surgeon, or the specialist. This individual, it seems, has always been amply provided for, although his work is no harder, nor is the responsibility any greater, than that of the general practitioner, who receives not one-tenth the fees. Therefore, "if the profession is to make a common stand for better wages, it must be for the sake of the general physician." And right here it might be suggested that one of the most effective means to aid him in helping himself would be to teach him, first of all, better business methods. In this regard it would seem that our district societies might take up the subject of the business relations of the physician to his patient; and also these relations to the public with whom he deals, with only good to their membership.

Our by-laws provide for this, and entire sessions ought to be devoted to this one topic alone more often than they are, for every man, regardless of his vocation, should have some knowledge of business rules and customs.

It is constantly a source of painful surprise the more one becomes acquainted with the business management of physicians to find among them so few who possess more than the simplest understanding of business methods. This characteristic, particularly of the family physician, in regard to things financial, is undoubtedly due to the fact that his practice imposes upon him, almost invariably, irregular habits of living, and affairs not purely medical receive very careless and indifferent thought.

In other instances again it seems impossible to keep pace with the rapid progress of the profession, if one devotes any time to business matters, and that spare moments must be occupied in study and reading, and finances neglected. With these we can sympathize, but we know from experience also that one can ill afford to devote himself so persistently to his vocation. It develops an exclusiveness which is not desirable in physicians, and it is this exclusiveness, found among so many, that obstructs real progress by limiting self-improvement along other lines through observation. In other words, because of too many hours of labor we as a profession do not mingle as we should with our fellows and especially with the business world, and

*Read before the South Dakota State Medical Association, May 29 and 30, 1907.

thus broaden our horizon. We are, in general, sufficiently versed in things medical, but we become circumscribed in other directions by too close application. In order, then, to make better conditions possible, it is necessary that fees be radically increased. This, of course, cannot be done under the impulse of the moment, but must take time, especially in localities where fees have been unreasonably small, for a custom long established is difficult to change. It can, however, be done, and those who have raised their fees, among them the writer, have found it less difficult than was at first anticipated.

The greatest difficulty was found among those who were not regular patrons, and to whom other physicians had rendered their services for smaller fees. Almost invariably in these instances, ill feeling is stirred up when it comes to settlement, and all the arguments advanced for the necessity of more pay for the doctor produce little or no effect upon them. They take the stand that Doctor So-and-so does the same work for much less, and they are "sticklers" for their position.

In my study of this subject, I have estimated that the minimum expense of the general practitioner in country practice, in this state, if he maintains a home, will amount to about \$2,000 per annum, and if reports are to be relied upon, as they come in from the smaller towns, where office-work is done for fifty cents and trips in the country at fifty cents per mile, day or night, it would seem to me it need not strain our powers of comprehension to realize that such fees are very little short of ruinous. They may have been adequate a decade or two ago, but at the present increased cost of living, together with the equipment the modern physician must now maintain, such fees are only disgraceful, both to the man and to the profession. Such fees accomplish at least three things:

1. The undervaluing effect on the services to the physician as well as to the public—a fifty-cent service for a fifty-cent fee, and this without casting any reflections on the physician. He is but human and has but human instincts, and so long as it is the custom for services rendered to be measured in money value, so will the value in money be the measure of the physician's services.

2. The idea of cheapness carries with it and develops a careless and superficial attitude, together with a want of self-reliance, so vital to the successful physician, and thus his capacity and skill for good work suffer.

3. Because of the added expense he cannot

afford to keep pace with the progress of his profession, and he becomes despondent. How easily then for one in this frame of mind to degenerate into the immoral practitioner and the quack!

In the estimation of annual expense, I have drawn conclusions from my own experience, together with that of other physicians with whom I have conversed in my section of the country, and I think the figures are approximately correct. Working, then, on this basis, it means that cash collections must be made approximating \$2,200 a year for expenses only; also that, at the fees quoted for his services, it would appear that nearly the entire time of the physician, working at top-speed almost constantly, would be necessary to maintain himself and family, and for recreation, for professional advancement, additions to his library, so necessary, medical journals, instruments, etc., there is practically nothing. Further: in order to maintain his standing in the community, do post-graduate work at stated intervals, and live becoming his profession, it is necessary that his cash income (not what is booked, but what is actually collected) should be about \$4,000 per annum. This constrains me then to ask, how many in general practice in this state command this net income? I fear not many, and surely a very few of the fifty-cent class, unless they have outside interests. Is it not our plain duty, then, to place a value upon our services commensurate with our standing and on a par with those whom we serve whose income has doubled and even trebled in the past decade?

The period in which we live demands this, and since we have the matter in our own hands, if these conditions exist in their locality, physicians can blame no one, other than the medical profession itself.

In brief, then, after adopting better business methods, it remains for the medical profession in this state, in order to promote and sustain its material interests, to organize, in so far as it may, and adopt and support in spirit a schedule of fees which need not be binding upon any one, but suggestive and minimum in character, that there may be some foundation upon which to work and perfect honesty among physicians in this regard in each locality.

This can be accomplished, and we need not fear, as some have expressed, that we shall be violating any anti-trust statutes of the state. An official opinion bearing on the subject has been written by the assistant attorney-general of Tex-

as, in this fashion: "It is not a restriction of the pursuit of business for any person or set of persons to refuse to sell their professional services for less than the value they themselves place upon them."

It is, then, through organization, primarily, that this problem must be solved; and I am confident the State Association can aid the country doctor in this regard, as much as it does in so many others, if it will suggest a schedule of fees, minimum in amount, to be adopted by its component parts, and thus establish a uniformity which might become operative over the entire state. It would do away with the evils of marked variations in schedules, with which those living near district lines would meet, particularly if each district were to formulate and adopt its own separate schedule and thus make it harder for them to live up to such varying schedules.

That there is a pressing need for some such plan at the present time, is evident. One need only recall his own experience as a new man in the state, when he found the greatest diversity of fees prevailing and what a hardship it worked. These conditions still exist in many localities. Each physician maintains his own fee-table, based upon what individual opinion dictates shall be just and adequate. As a natural result, no harmony exists, and I am not so sure that a new man in the field, particularly the young man, is alone blameworthy if his prices should run below that of the established physician. He has absolutely nothing upon which to base his judgment or to which he may safely turn for counsel.

At the last meeting of the Eighth District of this Association, a committee was appointed, of which the writer is one, to report the discussion on medical fees, which had taken place before the society up to that time, and to make recommendations, and with your kindly permission I shall incorporate into this paper, for what it may be worth to this Association, the report of that committee:

Our constitution and by-laws (see Sec. 3, Chap. 2, By-laws) prohibit us from making a schedule of fees, but we consider certain recommendations and suggestions proper. From the reports that came in from the smaller towns, we find that office-work is frequently as low as 50c and trips into the country as low as 50c per mile, night or day. These prices may have been all right twenty-five or forty years ago, but with the increased cost of living, together with the necessary equipment of the modern physician, such fees are inadequate. The carpenter, stone-mason, and other laborers earn two or three times as much as they did ten years ago, and it is not justice to ourselves for us to keep on charging the same as we did then. Every physician must be the judge of what his services

are worth, but we deem it proper to suggest a minimum fee—there is no such thing as a maximum fee. When we have saved life and the patient is able to pay, there should be no limit to the charge. It cannot be too high. In many cases we should charge according to the value of the services rendered and not according to the number of calls. In the following list of prices we only make suggestions as to a minimum fee. We are not making a fee-bill, nor is any physician expected to sign any agreement of any kind. This list simply represents the general consensus of opinion of the physicians of this district.

Where fees have been less it may take time to raise them. We cannot in some cases make a radical change, but those who have raised their fees have found less difficulty than was expected. The thing most needful is for physicians in each locality to be perfectly honest with each other in regard to this matter.

Remember that these are all minimum charges. You are at liberty to go as much higher as you like.

Respectfully and fraternally submitted.

D. W. RUDGERS,
S. M. HOHF,
J. L. STEWART,
Committee.

MEDICINE

Ordinary visits to residence.....	\$1.50
Mileage, first three miles from city, per mile one way	1.00
Additional miles, each (for day time) one way .....	.50
Mileage at night, per mile, one way, first ten miles \$1.00 per mile, balance 50c per mile.	
Night visits, from 10 p.m. to 7 a.m., in the city..	2.00
Each additional patient in family.....	1.00
Visit to contagious diseases (scarlet fever, diphtheria, smallpox and septicemia), per visit, mileage added	3.00
Consultation at office or over 'phone (in small towns it may be less)	1.00
Consultation with another physician (mileage added)	5.00
Each additional consultation (mileage added)..	3.00
Vaccination at office	1.00
Opinion involving legal question	25.00
Attendance at court as expert witness, per day (expenses added)	25.00
Post mortem	25.00
Antitoxin, for each injection in addition to visit	2.00
Antitoxin, to each additional patient in same family	2.00
Urinalysis (chemical)	1.00
Urinalysis (microscopical)	2.00
Gonorrhea, at office, in advance, first charge....	5.00
Regular charges thereafter.	
Syphilis, at office, in advance, first charge.....	5.00
Life insurance examinations:	
Fraternal	2.00
Old line	5.00

OBSTETRICS

Normal labor, not over six hours' duration, mileage added	\$10.00
For extra detention, each hour or fraction thereof	1.00
Instrumental, protracted or complicated cases...	15.00
Miscarriage	10.00
Removal of placenta	5.00
Craniotomy	50.00
Cæsarian section or symphysiotomy.....	100.00

GYNECOLOGY

Primary examination of vagina or rectum.....	\$2.00
Subsequent examination and treatment at office..	1.50
Gonorrhea and syphilis, same as in men.	

GYNECOLOGY—OPERATIVE

Removal of uterine polypi	\$50.00
Lacerated cervix	50.00
Lacerated perineum	50.00
Both at once	75.00
Imperforate hymen or anus, mucous tissue only	25.00
Curettage	50.00
Vaginal section	100.00
Vaginal hysterectomy	150.00

SURGERY

In all cases of surgery, anesthetic and assistants are extra.

Amputation of hip-joint	\$150.00
Amputation of thigh	100.00
Amputation of leg	50.00
Amputation of fingers and toes	5.00
Amputation of arm	50.00
Amputation of penis	50.00
Amputation at shoulder	150.00

Simple Fractures:

Fracture of femur	50.00
Fracture of neck of femur	150.00
Tibia	25.00
Tibia and fibula	50.00
Potts	25.00
Ribs	5.00
Humerus	50.00
Ulna	15.00
Ulna and radius	25.00
Colles	20.00
Fractures involving the elbow or knee.....	50.00
Inferior maxilla	50.00
Clavicle	15.00
Small bones	5.00

All compound or comminuted fractures are entitled to an extra charge, but from the variety it is impossible to fix a rate that will cover each case.

Dislocations:

Hip	\$50.00
Shoulder	30.00
Knee or elbow	30.00
Ankle or wrist	25.00
Other joints	5.00

Old and ununited fractures and unreduced dislocations are entitled to an extra charge, which it is impossible to rate.

Miscellaneous:

Reducing hernia by taxis	\$15.00
Operation for strangulated hernia	100.00
Fitting of truss	2.00
Fistula in ano	25.00
Vesicovaginal or rectovaginal fistula	100.00
External hemorrhoids	25.00
Internal hemorrhoids	50.00
Operation for prolapsus ani	100.00
Tapping hydrocele	10.00
Opening method for hydrocele	50.00
Introducing catheter	2.00
Circumcision	15.00
Operation for urethral stricture	25.00
Examination for calculus	3.00
Lithotrity	50.00

Lithotomy	75.00
Castration	50.00
Paracentesis, thoracis, or abdominis	10.00
All laparotomies, including hernial operation...	75.00
Application of plaster jacket	10.00
Trephining	100.00
Resection of joints	100.00
Benign tumors	5.00
Amputation of breast	75.00
Ligation of arteries, not in open wound.....	25.00
Operation for club-foot	25.00
Aspirating joints	10.00
Operation for bunions or ingrowing toe nails...	5.00
Giving an anesthetic	5.00
Assisting at operations	5.00
Hair-lip	50.00
Cleft palate	100.00
Nephrectomy or any operation on the kidney...	150.00
Cystoscopy	10.00
Catheterizing the ureter	25.00
Prostatectomy	100.00

OCULISTS AND AURISTS

Refraction, glasses extra	\$5.00
Cataract, soft	50.00
Cataract, hard	100.00
Operations on iris sclera or cornea	50.00
Enucleation	50.00
Evisceration	50.00
Pterygium	25.00
Operation on lids	25.00
Incising membrana tympani	10.00
Removing aural polypi	5.00
Ossiculectomy	25.00
Mastoid	100.00
Nasal spurs and turbinates	10.00
Nasal polypi	10.00
Tonsils and adenoids, general anesthesia	50.00
Operations on sinuses, frontal, ethmoid, or antrum	50.00
Tracheotomy	100.00
Intubation	50.00

BACTERIOLOGY AND MICROSCOPY

Examination of sputum, for tuberculosis.....	\$5.00
Throat-culture	5.00
Blood-count	5.00
Widal reaction, typhoid	5.00

In conclusion, if the discussion of the business methods of the physician, together with the "organized stand" on the question of fees, shall be the means of starting us on a uniform and adequate basis of compensation throughout the state, the object of this paper will have been fully attained.

DISCUSSION

DR. H. M. FREEBERG (Watertown): In a local way a great deal can be accomplished through a mutual agreement of all the physicians of a city or community. I know of several cities in which the physicians have gotten together, decided to raise their fees, and have maintained them.

About one year and a half ago, in Watertown, we raised the fee in this way, for visits in the city from \$1.00 to \$1.50, and have had no difficulty in maintaining this fee.

DR. E. F. REAMER (Mitchell): This question of fees is an old one, but it is very important. I am glad to say that the Mitchell society practically settled this a year ago last December by adopting a new fee-bill, which, as far as the doctor read, was the same as ours. On insurance, etc., it was exactly as he read.

We had it printed on a nice card, which was framed and put up in our waiting-rooms. It helped a great deal. I am satisfied that the only way to do is to get together in your various districts, and then in the state, if we can, and adopt a fee-bill, put it up where our patients can see it, and then live up to it; then, if it does not work, it is the fault of the individual rather than of the whole profession.

DR. D. W. CRAIG (Sioux Falls): It is too bad to see this important subject passed by without any further comment. It is of vital importance to us, for our bread and butter depend upon the price we place upon our services. Now what are we going to do? Same as always: keep quiet and let our interests suffer? Now let us wake up and discuss this paper and resolve this afternoon that we will no longer be so easy. If our services are not worth it then we don't deserve it, and when that is the case it would be better to give up the practice of medicine and make an honest living. For myself I am charging as high rates, where the patient can pay it, as any one in town. I frequently

hear that I would have lots more work to do if I would not charge so much. Such a reputation is all right, but a doctor must say what he is worth. If we did not value ourselves so low people would think more of us.

I would like to hear from others.

DR. HOHF (Essayist): I thank you for the free discussion the paper has provoked, and especially is it pleasing to know that this Association is willing to be placed on record as favoring a uniform schedule of fees. It is now up to the societies to act upon the suggestion, and to see to it that men who agree to adopt them live up to them. This can be done only as our meetings become so important and interesting that members will feel it a privilege to retain their membership therein, and those who are not now members of the local societies will be anxious to come in, and all abide by the ruling of the majority.

We cannot bind ourselves to any schedule of fees, but this Association may adopt a suggestive one. This is the basis on which the paper is written. It is uniformity of action that we need, which also implies that every physician be put upon his honor; and, right here, I will say that whatever this Association undertakes, it will find me standing squarely on my feet for it.

APPENDICEALGIA, OR NON-INFLAMMATORY DISEASE OF THE APPENDIX*

By F. E. WALKER, M. D.

Surgeon to Our Lady of Lourdes Hospital

HOT SPRINGS, S. D.

It is not a rarity for the physician or surgeon to be approached by a patient whose subjective symptoms are analagous to inflammation of the appendix, yet whose history does not reveal any past or present inflammation, either of the appendix or other abdominal organ; and upon section corroborative evidence is adduced to prove that an inflammation does not and did not exist, and therefore it is improper to speak of it as an inflammation. The principal symptom being pain, I have applied to this condition the term *appendicealgia*, which, in other words, may be a pre-appendicitis.

Definition.—Pain in the abdomen, usually referable to the right iliac region, due to a pathological condition of or within the appendix and unaccompanied with an increased pulse-rate or rise in the temperature.

Etiology.—Congenital deformities of the appendix, such as twists, shortened mesentery, absence of a mesentery, angulation, flexions, attach-

ment of the distal end of the appendix to the peritoneum, mesentery, or other abdominal organs, narrowed lumen, contractions, foreign bodies within the appendix, constipation, digestive disturbances, overwork, overexercise, especially of the right side, overindulgence in food, injuries, and neurosis.

One detrimental feature of medical advice and treatment is that as soon as the patient has passed from supervision, he will fall into his old habits and another attack is precipitated.

The following are classified operations performed upon three hundred patients suffering from appendiceal involvement:

Acute appendicitis, catarrhal.....	32.
Chronic	59.
Suppurating	18.
Perforating	8.
Gangrenous	6.
Chronic	38.
Recurrent	105.
Appendicealgia	34.

From this table it will be seen that 11 1-3 per

*Read before the Black Hills District Medical Society, Hot Springs, S. D., Sept. 7, 1907.

cent of all cases operated gave no history, past or present, of any inflammation, and no evidence could be obtained to indicate an inflammation of the appendix or other abdominal organ. However, upon section the following facts were noted:

1. Two appendices were removed which were distinctly inflamed, the inflammation being wholly confined within the appendix.

2. One was filled with foul-smelling pus, and microscopic examination showed active pus-organisms.

3. Three gave evidence of previous inflammation, which no doubt had been in early childhood or infancy.

The true cases of appendicealgia in which the pre-operative diagnosis was confirmed upon operative evidence was thus reduced to 28, or 9 1-3 per cent of the entire series.

Division of Cases.—Group 1, in which there was continual pain though mild, 5.

Group 2, in which pain was constant with frequent acute exacerbation, 12.

Group 3, in which pain was periodical, 11.

Of the 28 cases habitual constipation was present in 12; diarrhea in 3; marked neurosis in 2; digestive disturbance, more or less severe, in 21.

In four no unnatural condition of the appendix was discovered.

Symptoms.—Pain is the most important and constant symptom, is always present, and is best studied under three heads:

1. In which pain is mild but constant. The appendix is usually small, and there are habitual constipation, slight strictures, flexures, narrowed lumen, neuroses, and more or less marked digestive disturbance.

2. In which pain is constant with frequent acute exacerbations. The appendix will have marked degrees of flexion, angulation, stricture, especially at the cecal extremity, hardened feces or other hard substances within the appendix, shortened mesentery, extreme degrees of chronic constipation, and adherent appendix to the cecum or along its entire course or buried beneath a thin membrane.

3. In which pain is periodical. Lumen is filled with soft feces or mucus, which finds comparatively easy ingress but rather difficult egress, habitual constipation, anemia, over-indulgence in eating, excessive exercise, especially of the right side, fatigue, neurosis, and other diseases or disturbances of the pelvic or abdominal organs.

Subjective Symptoms.—Headache, nausea, anorexia, malaise, vague and migratory abdominal pain and fullness, borborygmus, general or local-

ized abdominal tenderness, and there may be emesis in some patients.

Objective Symptoms.—Tongue coated, red, and oftentimes very dry. Percussion may elicit pain, though deep palpation is usually necessary to determine tenderness in or about the appendix. Tympanites is generally present, and abdominal distention is sometimes quite marked. Frequently the patient supports the right side in walking or riding. Temperature, pulse, and respiration normal.

Prognosis.—The prognosis for spontaneous cure is nil. Under intelligent medical treatment many of these patients receive permanent benefit, and I believe the majority of all cases are relieved, at least temporarily. However, the tendency is towards a decided increase in the development of all the symptoms, precipitating an attack of true appendicitis, and such attacks are more severe than in those patients in whom a previous inflammation existed, as in those who have passed through a true inflammation of the appendix, more or less severe, there is always a certain degree of immunity, while in those suffering from appendicealgia the tendency is towards a weakened condition of the appendix and its function, the physical system is not up to standard, and the general natural body-resistance is lowered; therefore, if an inflammation develops it is more prone to culminate in a serious attack, with pus, gangrene perforation, sloughing, or peritonitis as a result. In a large majority of these patients a true inflammation will result sooner or later, and as the general health is not good the condition should be studied carefully and appropriate treatment instituted early.

Treatment.—The ideal procedure is surgical. Regarding this disease as one inimical to the general health, together with the possibility and the probability of its developing into a serious attack of appendicitis at any moment, we are fully justified in removing the appendix at the first opportunity, and every patient should be so advised. In the medical treatment, drugs, massage, rest, regulation, and restriction of diet, and exercise appropriate for the accompanying symptoms, should be given, and there is no doubt a few thus treated will not have a second attack.

Operative Results.—

Complete restoration to health.....	19.
Improvement and freedom from pain.	7.
Freedom from pain, without other improvement	1.
No relief	1.
Deaths	none.

I have examined a number of patients who complained of pain at or near McBurney's point in which no history was given to indicate a true appendicitis, owing to the fact that the classic symptoms of inflammation could not be obtained. Several of these ultimately developed appendicitis, and in one instance death followed. It is highly important that we recognize these pre-appendicitic or appendicealgiac symptoms, and apply early appropriate treatment. The fact that in all the cases herein reported the condition revealed upon operative evidence showed a true pathology is conclusive proof that such an appen-

dix is in great danger of developing serious inflammation, and such being the case it is most essential that removal of the predisposing factor should be the rule.

I am indebted to the following surgeons, whose wide experience in surgery of the appendix has been of material assistance in preparing this paper:

Dr. C. C. Allison, Omaha, Neb.
Dr. V. B. Knott, Sioux City, Iowa.
Dr. J. W. Andrews, Mankato, Minn.
Dr. Donald Macrae, Jr., Council Bluffs, Iowa.
Dr. A. J. Ochsner, Chicago.

PHYSIOLOGIC CHEMISTRY AND DIETETICS

CONDUCTED BY

RICHARD OLDING BEARD, M. D.

Professor of Physiology, University of Minnesota

ASSISTED BY

J. P. SEDGWICK, B. S., M. D.

Instructor in Physiologic Chemistry, University of Minnesota

A BALANCED INFANT DIETARY

It seems to be true, despite the constant pendular swing of action and reaction, that, as Browning puts it, we "make head, gain ground upon the whole." The pity is that, in medical progress, reaction is so often necessary. The tendency to extremes of theory and practice is so commonly exhibited that whilst, at one moment, we appear to be moving forward with a fine impetus, the next, we are as eagerly taking the back track.

An instance in point is to be found in certain theories of infant-feeding. It is but a short time since Rotch and his followers took up the cry of excessive proteid supply. Multiplying analyses of human milk established its relatively small content of proteid material, and at once the shibboleth of modified milk became the dictum of the day, with especial emphasis upon the proteid index.

As a matter of fact, while the method of modification was new the practice of proteid dilution was not, and there was little real ground for the contention. Nevertheless, the dogma of the danger of excessive proteid feeding found many believers, and, for a while, babies were subjected to partial proteid starvation.

By and by, the reaction set in, and to-day Dr. Thomas Grant Allen, in a recent article in the

Archives of Pediatrics, voices the best authority in saying that too much proteid is seldom fed in the early months of infancy.

With that reaction another wide swing of the pendulum of opinion has occurred. Too much fat is the new cry, and a fat-free milk has become the slogan of the later modernists. Already, the movement has resulted in the substitution of the carbohydrates, as starches, dextrins, or sugars, to the point of excess. Maltose has been the best single item of substitution; cane sugar, the worst.

It goes without saying that the rapidly metabolized and erroneously-termed fuel-foods are indispensable to the infant diet. Proteid excess, which, as Allen suggests, is far more common in the later than in the earlier months of infancy, imposes too great a metabolic burden upon the organism. If fats are denied, carbohydrates must be fed; and it may be doubted if excess of the one provides as apt a culture-medium for intestinal bacteria as does excess of the other.

The pendulum of opinion upon the question of infant dietary, is very much in need of better poise. A well-balanced ration is the ideal to be sought after, the caloric value of which is carefully proportioned to the weight and conditions of growth in the child; a ration so fed as to furnish time for its perfect digestion and absorp-

tion and for a due interval of physiologic rest between the digestive acts. BEARD.

THE RELATION OF GASTRIC IRRITATION TO SHOCK

A painstaking study of "The Acute Effects of Gastric and Peritoneal Cauterization and Irritation on the Blood-pressure and Respiration," by Sollman, Brown, of the University of Minnesota, and Williams, appears in the October number of the American Journal of Physiology. This work was led up to by the earlier well-known studies of these investigators on the treatment of carbolic-acid poisoning.

The following corrosives and irritants were used, NaOH, H₂SO₄, HNO₃, HCl, phenol, actual cautery, formalin, spir. mustard, hot water, alcohol, spir. peppermint, 5 per cent acetic acid, cold water, simple distension, and evacuation.

The conclusions drawn are: "Corrosion or violent or mild irritation of the gastric mucosa, submucosa, or serosa of the parietal peritoneum, has generally no acute reflex effect upon the blood-pressure or respiration in anesthetized dogs." It is expressly stated, however, that "experiments now under way tend to show that this insensibility to strong corrosives is not shared by the mucous membrane of the mouth and by the larynx and trachea."

These results should prove of especial interest to the surgeon operating on the abdominal viscera and to the toxicologist. SEDGEWICK.

ALIMENTARY INTOXICATION

The chemical study of alimentary intoxication in infants carried out by L. F. Meyer (Jahrbuch f. Kinderheilkunde, May, 1907) is a definite addition to our knowledge of metabolism.

The alimentary intoxication studied is that recently described by Finkelstein, which he considers characteristic of a large proportion of intestinal diseases in infants. According to the latter this condition is characterized by a definite group of nine symptoms, which serve for sharp differentiation from similar conditions. These are:

1. Disturbance of consciousness.
2. Peculiar change in the breathing.
3. Alimentary glycosuria.
4. Fever.
5. Collapse.
6. Diarrhea.
7. Albuminuria and casts.
8. Abrupt loss of weight.
9. Leucocytosis.

Meyer studied the metabolism of the proteins, carbohydrates, fats, water, and salts in these cases.

In the cases of intoxication the normal retention of nitrogen did not occur, but it was possible to demonstrate an increased breaking-down or katabolism of the protein materials, or, in other words, of the cell substance.

Sugar was found in the urine in all of these cases in which it was being fed. It occurred long before the normal limit of sugar-tolerance was reached. The alimentary glycosuria, which Gross, Langstein, and Steinitz were able to show in a few cases, and we are able to confirm from demonstration in 150 carefully examined cases, is present in every case of this type of intoxication. The appearance of sugar in the urine is premonitory of such trouble and has proved of great value in prophylaxis. On a water diet, strictly carried out, this "la diète hydrique" glycosuria disappears rapidly.

In each case the sugar was demonstrated by the phenylhydrazine as well as the copper test. The urine shows usually from 1 to 2 per cent of sugar. The sugar was found in the form of lactose, galactose, and maltose. (Keller malt-soup feeding.) Glucose was not found. Buttermilk gave galactosuria and lactosuria. The starches did not give glycosuria.

The finding of monosaccharides in the urine was considered to indicate a disturbance of the internal metabolism; disaccharides in the urine were attributed to imperfect functioning of the intestinal epithelium.

The fat-absorption was found to be interfered with in alimentary intoxication. Acidosis and increased ammonia coefficient were found.

The finding that the greater part of the loss of water, contrary to the usual idea of such diarrheas, is through the skin and lungs, is of interest.

The study of the salt-metabolism showed a great loss of these bodies through the excreta.

Protein food did not increase the intoxication, though carbohydrates and fats did.

These chemical findings have been put to the test clinically, by Finkelstein in his institution with more than 300 infants, and especially the study of the glycosuria, and have been found to be of real value in prophylaxis and treatment of these conditions.

It will be of great interest to those of us who have used the absolute water-diet therapeutically, and have seen that it is not alone the diarrhea that is improved thereby, but the general physical and psychical condition of the little patient, to know that a definite disturbance of the metabolism is present in these cases, which may be relieved by the "la diète hydrique."

SEDGEWICK.

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FEBRUARY 15, 1908

The annual meeting of the State Medical Association will be held at St. Paul, October 7 and 8, 1908.

PARATHYREOID GLAND FOR PARALYSIS AGITANS

In an article in the New York Medical Journal for November 23, 1907, Dr. W. N. Berkeley records his further experiences in the use of parathyreoid gland in paralysis agitans. This gland is evidently essential to animal life, as its excision shows, within twenty-four hours, an enormously hurried respiration, tachycardia, profuse salivation, constant twitching and shivering of voluntary muscles, rigidity, convulsions, refusal of food, rapid emaciation, and death within a few hours or days. All operators who attempt to remove the whole or a part of the thyroid gland in cases of exophthalmic goitre, carefully avoid injury or removal of the parathyreoids. Lundborg, the Swedish neurologist, and Dr. Berkeley believe that paralysis agitans belongs to the convulsive nervous diseases, and that, in some way, the parathyreoid may be essential to their development. Reasoning in this line leads to the use of parathyreoid gland as a possible

remedy for paralysis agitans. The gland material has a remarkable "antispasmodic" action, which may prove symptomatically helpful in numbers of different diseases.

Berkeley reports some seventy-five patients, in the hands of himself or of medical friends or helpers, that have been treated. His notes or personal knowledge of thirty cases is interesting. Of these, two declined to continue the remedy; two have not been heard from; five denied any benefit; three showed temporary improvement only; and eighteen were progressively benefited during the entire time in which they were under treatment.

There are many difficulties to be overcome in the administration of this new remedy. Only the properly identified gland must be used; and the glands obtained from human beings at autopsy and ox glands are preferred. The glands from the horse are too expensive, and the glands of the sheep and rabbit are too small and too hard to find. Many experimenters have used tissues supposed to contain the parathyreoid and have been unsuccessful. Commercial products are unsatisfactory and unreliable. The ox glands are gotten on ice fresh from the abattoir. They are carefully identified, trimmed with sterile instruments, pressed dry between folds of sterile gauze, minced in a small, finely-cutting sausage-machine (it must be scalded before using), and rubbed up in a sterile mortar with an excess of milk-sugar. To this mess 1 per cent boric acid is added, with a trace of the essential oil of peppermint usually.

The preparation is dispensed in capsules, each capsule corresponding to one-half grain of fresh ox gland. Of the capsules 3 to 5 per day are enough. Improvement is noted in from one week to three months.

If anything can be found to mitigate the chronicity of an uncomfortable disease, like paralysis agitans, it should be given a prolonged trial.

MEDICAL INSPECTION IN THE PUBLIC SCHOOLS

The importance of the medical inspection of school children in Minneapolis has passed beyond the experimental stage, and is developing into a large problem. So far the Board of Education have permitted inspection in one school, and that, fortunately, is situated in a district where many poor children attend. The teachers are very much in favor of the inspection, and the children are enjoying the novelty of the situation.

Out of 937 children in the Franklin School

354 had been examined when the report was made to the Board of Education. Fifty per cent of this number had enlarged cervical glands; 32 per cent suffered from malnutrition; 31 per cent had defective teeth; 31 per cent had enlarged tonsils; 13 per cent had adenoids; 16 per cent had defective vision. Other defects were found in a smaller percentage.

This preliminary work alone demonstrates the urgency of medical inspection, and emphasizes the necessity of health and normal physiologic growth before education is crammed into children. These children have failed to pass their grades 284 times! This fact alone is an object lesson for unbelievers. If defects are responsible for failures it is time that medical inspection is put on a proper basis, and made compulsory in all schools, particularly in children who show a backward tendency.

When other schools are undergoing tests it will be interesting to note the conditions found in the various localities. The children in some districts may be cleaner than in others, but the percentage of defects will not vary greatly.

Medical inspection will lead to better sanitary instruction, out-of-door sports, gymnasium work, heating and ventilating improvements, and, what is most important, a better body and a clearer mind for the reception of educational improvement.

Comparatively little objection was offered by the pupils and parents. About 150 out of the 937 objected to the examination. Some objected from a religious view-point, some from ignorance, and some because they did not believe in it.

In Eveleth, Minn., medical inspection of children in the public schools has obtained for several years, and much good has come of it. In other states and in many small cities, inspection of children is an old story and is a part of the child's school life. In Great Britain parliament has gone so far as to create a medical department for the whole kingdom, to advise and supervise local educational authorities in the matter of inspection. It is very evident that Minneapolis educators must humbly admit that they have been lagging behind the procession. Perhaps St. Paul will take up the matter, and eventually the system will be adopted over the entire state. In the large cities where the poorer children can be furnished free medical treatment for their illnesses by the dispensaries, there need be no uneasiness as to relief measures.

THE JOURNAL-LANCET will publish the results of the inspection from time to time, with the

belief that it will be helpful to other towns and cities.

QUARANTINE AND SMALLPOX IN MINNESOTA

The article by Dr. H. M. Bracken, Secretary of the State Board of Health, in this issue, on the present status of smallpox in Minnesota, should be read by every physician, and its contents should find their way into the daily and weekly press of the state. During the time in which quarantine regulations were in force in Minnesota, and from August, 1907, until January, 1908, there were 583 cases of smallpox in the three large cities of the state, and 1,160 cases in other counties and towns in the state, a total of 1,743 cases reported to the State Board. Aside from these there were 265 cases in eight epidemics in villages not reported. If this number existed under quarantine regulations there must be something radically wrong with methods of quarantine.

In making the new regulations, the Board of Health expected criticism and is ready for it, but it does not enjoy the misrepresentations and false statements from many of its critics. Evidently, there are still misunderstandings among physicians and lay writers who have not studied the situation.

The St. Paul Medical Journal, in an editorial, mildly criticises the Board, but, like many other journals, it has failed to grasp the point the Board wishes to convey. General quarantine regulations have been abandoned because it is impossible to carry them out rigorously and satisfactorily and to include or isolate all cases that carry infection. The exposed case, the mild case, and the person who willfully evades quarantine cannot be controlled, as is shown by the number of cases reported in the article referred to. During 1901, 1902, and 1903, when the largest number of cases were reported, quarantine regulations were in full force, but it made no difference in the spread of the disease. If quarantine regulations were successful, such an epidemic would not occur. Hence, in the judgment of the Board of Health, quarantine alone for epidemics of smallpox was a failure; and yet the Board has not *abolished* all quarantine: it still maintains quarantine of the sick, which is practically the only form of quarantine that has ever been enforced or that can be enforced, except in isolated cases.

It has been conclusively proven that vaccination is the best safeguard and as soon as the

people realize and understand that this is a fact, smallpox will cease to exist.

These two reasons, the failure of quarantine measures and the immunity of the vaccinated, are sufficient to justify the act of the Board.

Perhaps it is as well that early criticism is hurled at the Board, for, after a time, the success or failure of the new regulations will speak for themselves.

REPORTS OF SOCIETIES

This department is reserved for official reports and news of county and district societies. As the secretary of the Minnesota State Medical Association is now receiving reports upon blanks furnished by him and pursuant to action taken at the last annual meeting, the department will be much fuller and correspondingly more interesting.

CLAY-BECKER COUNTY SOCIETY

The Society met at Granite Falls, Jan. 23d, with 10 members present. A fee-bill was adopted, and some miscellaneous business was transacted.

Officers were elected as follows: President, Dr. M. E. Bushey, Arlington; vice-president, Dr. F. J. Cressy, Granite Falls; secretary-treasurer, Dr. R. D. Zimbeck, Montevideo; censors for three years, Dr. A. G. Stoddard, Fairfax, and Dr. E. O. Giere, Madison.

R. D. ZIMBECK, M. D., Secretary.

CLAY-BECKER SOCIETY

The annual meeting of the Society was held at Moorhead, on January 27th, with 8 members present. Dr. D. C. Darrow, of Moorhead, presided. Dr. O. J. Hagen, of Moorhead, read a paper on "Clinical Notes."

The following officers were elected for 1908: President, Dr. G. W. Frazier, Detroit; vice-president, Dr. W. H. Aborn, Hawley; secretary-treasurer, Dr. E. R. Barton, Frazee; delegate, Dr. W. J. Awty, Moorhead; alternate, Dr. F. H. Alexander, Barnesville; censor for three years, Dr. W. J. Awty.

Two new members were elected.

E. R. BARTON, M. D., Secretary.

HENNEPIN COUNTY SOCIETY

A mid-monthly meeting of the Society was held on Jan. 20th. In the absence of the president, the vice-president, Dr. J. G. Cross, occupied the chair. There were 30 members present. A letter from Dr. T. G. Lee was read inviting the

members of the Society to attend an address by Prof. R. H. Chittenden, of Yale University, on the subject of "Some New View-Points in Nutrition," to be delivered at the University on the evening of Feb. 24th.

Dr. L. A. Nippert then delivered an address on "Observations Made in the Clinics of the German Universities," which was discussed by Drs. W. E. Rochford and F. A. Dunsmoor, and, in closing, by Dr. Nippert.

Dr. J. Clark Stewart read a paper on "Syphilitic Simulation of Malignancy," and the same was discussed by Drs. C. A. Donaldson, J. F. Corbett, H. B. Sweetser, J. W. Little, S. E. Sweitzer, L. A. Nippert, E. K. Green, G. P. Crume, J. G. Cross. The discussion was closed by Dr. Stewart.

C. H. BRADLEY, M. D., Secretary.

NICOLLET-LE SUEUR SOCIETY

The annual meeting of the Society was held at Le Sueur on Jan. 21st. Papers were read by Dr. A. B. Aitkens, of Le Sueur, on "Cases of Head Injury," and by Dr. H. A. Tomlinson, of St. Peter, on "A Case of Typhoid Fever, with Unusual Complications."

The following were elected officers for 1908: President, Dr. G. F. Merritt, St. Peter; vice-president, Dr. G. H. Freeman, St. Peter; secretary, Dr. J. E. Le Clerc, Le Sueur; treasurer, Dr. J. W. Daniels, St. Peter; delegate, Dr. F. P. Strathern, St. Peter; alternate, Dr. H. B. Aitkens, Le Sueur Center, censor, Dr. H. D. Valin, St. Peter.

The visiting physicians were given a banquet by the physicians of Le Sueur.

J. B. LE CLERC, M. D., Secretary.

UPPER MISSISSIPPI SOCIETY

The Society held its annual meeting at Little Falls on Jan. 21st, with 17 members present.

Papers were read as follows:

"Some Therapeutic Notes," by Dr. J. G. Mills-paugh, Little Falls; "Empyema Pleuræ," by Dr. J. A. Thabes, Brainerd; "Diphtheria," by Dr. E. E. Hall, Little Falls; "Five Cases of Cancer of the Rectum," by Dr. G. R. Christie, Long Prairie; "An Orthopedic Clinic," by Dr. Arthur Gillette, St. Paul.

Officers elected for 1908: President, Dr. L. M. Roberts, Little Falls; vice-president, Dr. O. T. Batcheller, Brainerd; secretary, Dr. G. H. Lowthian, Akeley; treasurer, Dr. Paul E. Kenyon, Wadena; censor for three years, Dr. Walter Courtney, Brainerd.

CHAS. F. COULTER, M. D., Secretary.

RED RIVER VALLEY SOCIETY

The annual meeting of the Society was held at Crookston on January 28th, with 15 members present.

The program consisted of a symposium on "Pneumonia," by Dr. C. H. Kjelland, Dr. A. Just, and Dr. C. E. Dampier, all of Crookston; a paper on "Hydrotherapy in Diseases of Children," by G. S. Wattam, of Warren; and one on "Treatment of Scarlet Fever and Diphtheria," by Dr. W. Randolph, of Crookston.

The following were elected officers for 1908: President, Dr. J. S. Cummings, St. Hilaire; vice-president, Dr. H. Holte, Crookston; secretary-treasurer, Dr. H. Hodgson, Crookston; delegate, Dr. I. Lemieux, Red Lake Falls; alternate, Dr. Theo. Bratrud, Warren; censors, Drs. Holte, Lemieux, and Stuhr.

A. H. HODGSON, M. D., Secretary.

RAMSEY COUNTY SOCIETY

The annual meeting of the Society was held on January 27th, with 51 members present.

After the reports of the various standing committees had been made, and discussed, the President's Address was read; and then the following officers were elected: President, Dr. Arthur Sweeney; vice-president, Dr. Jno. T. Rogers; secretary-treasurer, Dr. F. E. Leavitt; necrologist, Dr. A. F. Whitman.

F. E. LEAVITT, M. D., Secretary.

ABERDEEN (S. D.) DISTRICT SOCIETY

The annual meeting of this Society was called to order by the president, Dr. Chas. E. McCauley, in the rooms of the Aberdeen Commercial Club, Tuesday evening, Jan. 21st, 1908, 30 doctors being in attendance.

The program consisted of the president's address, by Dr. Chas. E. McCauley, and a paper on "Intestinal Obstruction," by Dr. A. T. Mann, of Minneapolis.

The following officers were elected for the current year: President, Dr. H. J. Rock, Aberdeen; vice-president, Dr. J. G. Chichester, Redfield; secretary, Dr. M. C. Johnston, Aberdeen; treasurer, Dr. W. E. Clark, Frederick; delegate, Dr. D. E. Arnold, Aberdeen; alternate, Dr. D. J. Carsons, Faulkton; censors, Dr. H. E. McNutt, Aberdeen; Dr. J. D. Jones, Grafton; Dr. E. Jay Clemons, Aberdeen.

Dr. A. V. Rock of Huron, was elected to membership. The following were proposed for membership, and will be acted upon at the next meeting: Dr. C. C. Hoagland, Vebelin; Dr. W. A. Bates, Mansfield; Dr. Arthur J. Button, Bowdle;

Dr. A. O. King, Aberdeen; and Dr. J. C. Gilfillan, Aberdeen.

A banquet was served after the meeting.

E. JAY CLEMONS, M. D., Secretary.

NEWS ITEMS

Dr. A. Cyr has moved from Ghent to Barnesville.

Dr. C. M. Bradley has moved from Lake Benton to Alden.

Dr. J. H. Drake has moved from Alexandria, Minn., to Buford, N. D.

Dr. P. J. Bursheim, of St. Olof, Iowa, has located at Lake Benton.

Dr. H. L. Gregg, of Peru, Neb., expects to locate in Oelrichs, S. D.

Dr. A. A. Sorenson has moved from Summit, S. D., to Aberdeen, S. D.

Drs. Harris & Herman, of Webster, S. D., have dissolved partnership.

Dr. Mary R. Strickler, of Sleepy Eye, is doing post-graduate work in Chicago.

Dr. F. M. Archibald, formerly of Breckenridge, has located at Wahnomen.

Dr. Lea Murphy has moved from Badger to Montevideo, where he formerly practiced.

Dr. Murdock MacGregor, of Fessenden, N. D., is doing post-graduate work in Chicago.

Drs. S. H. Olsen and H. D. Bacon, of Milaca, have established a hospital at that place.

Dr. J. B. Noptzger, of Sturgis, S. D., has sold his practice to Drs. Smith and McSlory.

Dr. W. W. Holden, who recently moved from Winnebago City to Amboy, died last month.

Dr. N. L. Werner, a 1903 graduate of the University of Illinois, has located in Red Wing.

Dr. B. S. Nickerson, of Glencoe, was married last month to Miss Kasper, of the same place.

Dr. H. H. Healy, of Grand Forks, N. D., is at home from a post-graduate course in Chicago.

Dr. D. W. McDougald, of Minneapolis, has taken the practice of Dr. D. A. Kirk, of Le Sueur.

Dr. J. G. W. Havens, a graduate of the University of Pennsylvania, has located at Cloquet.

Bids were opened last week for building the new hospital and Deaconess' Home at Bismarck, N. D.

Dr. A. W. Swedenburg, who has been practicing a short time at Ellendale, has moved to Roberts, Wis.

Dr. Ernest L. Cheney, of Duluth, was married to Miss Grace Lillian Hinckley, of Chicago, on Feb. 5th.

Dr. T. P. Ranney, of Chicago, has accepted a position on the staff of the Moore Hospital, of Eveleth.

Dr. A. Kahala, who went to Idaho last spring, has returned to Erskine, to resume practice at that place.

Northwood, N. D., is to have a \$20,000 hospital to be put up by the Deaconess' Hospital Association.

St. Luke's Hospital, of Fargo, N. D., has been completed at a cost of \$40,000, and will be dedicated this week.

Drs. McMichael and Jacoby, of Vernon Center, have dissolved partnership. Dr. Jacoby will seek another location.

Dr. F. E. Walker, of Hot Springs, S. D., is to put in a 25-tent colony for tuberculosis a few miles out of Hot Springs.

Dr. Ira S. Abplanalp, of Ray, N. D., was married last month in Minneapolis to Miss Elizabeth McLeod, of Albany, Mo.

Dr. H. A. Hitchcock, one of the oldest physicians in the state, who formerly practiced at Madison Lake, died last month at the Soldiers' Home.

Dr. W. C. MacCarthy, assistant pathologist in St. Mary's Hospital, Rochester, was married to Miss Helen Maud Collin, of the same place, on Jan. 25th.

Dr. J. Clark Johnston, of Butte, Montana, died last month at the age of 59. Dr. Johnston had long been a leading physician and surgeon in Montana.

Dr. John D. Henning, of Fargo, N. D., died last month at the age of 58. He was a graduate of Jefferson Medical College, and located at Fargo in 1890.

Dr. Carl E. Lundgren, of Harris, who came to Minnesota in 1883, has retired from practice on account of failing health. He will hereafter reside in Washington, D. C.

Dr. W. E. Robinson, who recently moved to Rapid City, S. D., from Spearfish, S. D., has been appointed company physician for the Laphere-Hinrichs Company, of that place.

Dr. J. S. Eaton, an old-time Minnesota physician, who served with distinction in the Civil War, died last month at Benson. He had practiced also at Mankato and Lac qui Parle.

St. John's Hospital, of Kenmare, N. D., was opened last month. The hospital has four wards and six private rooms. It is controlled by Drs. Wiig and Kron. Dr. Wiig is a graduate of Hamline, '03.

Dr. George B. Ribble, who recently moved from La Moure, N. D., to Fargo, has returned to La Moure, the citizens of that place urging him to return because Dr. Orrittell gave up his practice there.

Dr. Samuel S. Wentworth, of Minneapolis, died on Jan. 31st, at the age of 71. Dr. Wentworth was a graduate of Dartmouth Medical School, and came to Minneapolis in 1882 from Malone, N. Y.

The Swedish Lutheran church of the Lake Superior District has decided to build a hospital in Duluth. Rev. C. C. Olson, of Duluth, headed the committee which investigated the subject and reported in favor of building.

Dr. Robert P. R. Gordon, of Great Falls, Montana, died last month at the age of 47. Dr. Gordon came from Scotland in 1887, located at Great Falls, and soon distinguished himself for high abilities and lovable character.

Dr. J. W. McRoberts, of Hot Springs, S. D., has gone East to take post-graduate work in internal medicine and diseases of children. Dr. A. H. Thornton, of Alliance, Neb., is in charge of Dr. McRoberts' office during his absence.

Dr. George G. Eitel, of Minneapolis, was married on Feb. 1st, to Miss Jeanette E. Larsen, of Sioux Falls, S. D. Dr. Eitel is well known as one of the leading surgeons of the Northwest. Miss Larsen was superintendent of nurses at the Minneapolis City Hospital for two years.

The report that Dr. Geo. E. Sherwood had moved from Kimball to Mahanomen was an error. Dr. Sherwood writes us that he is "still doing business" at Kimball, and as his letter-head shows that he is president of the State Bank of Kimball, with "surplus and profits" equal to half the bank's capital stock, we infer that he tells the literal truth.

The Oconomowoc Health Resort, located at Oconomowoc, Wis., lost its building by fire last month. The loss in some respects was a grievous one, but in others it comes as a blessing in disguise. Dr. Rogers informs us that work has already been begun on a new building which will be ready for occupancy on August 1st. The new building will be thoroughly fireproof, and will embody all that is best in modern, sanitary construction; and it will be, architecturally, in harmony with the beautiful location of the resort.

PHYSICIANS LICENSED AT THE JANUARY, 1908, EXAMINATIONS TO PRACTICE IN MINNESOTA

UPON EXAMINATION

Calhoun, F. W., Rush Medical, 1907.
 Havens, J. G. W., University of Penn., 1903.
 St. Clair, G. G., Univ. of Michigan, 1907.
 Swedenburg, A. W., College of M. & S., Chicago, 1907.

LICENSES GRANTED AT THE JANUARY MEETING OF SOUTH DAKOTA STATE BOARD OF MEDICAL EXAMINERS

Willard A. Bates, Mansfield; Wallace M. Bickford, Lead; Jonathan E. Bruner, Hecla; James C. Clark, Jr., Cottonwood; Robert W. Claypool, Highmore; Nelson Edgar, Canova; Abram B. Fleeger, Parker; Kenneth M. Ferguson, Scotland; Harley E. French, Vermillion; Jonah C. Gilfillan, Aberdeen; Sidney G. Hands, Murdo; Michael M. Hofer, Gregory; Carl A. Homan, Chicago, Ill.; Edward G. Hutterer, Wall; Bert R. Karn, Ortonville, Minn.; Ray A. Kelly, Davis; Hiram I. King, Aberdeen; William T. Lindsey, Chamberlain; Aug. W. Pearson, Peever; Fred'k T. Rice, Gann Valley; Ray L. Richardson, Madison; Roy F. Sackett, Hurley; William Schroeder, Midland; Fred'k W. Valkenaar, Bridgewater; Charles E. Weidman, Chamberlain; Russell H. Wheeler, Rapid City.

At this meeting the Board voted to require after 1910 a preliminary education of one year, at least, in a college of liberal arts, or its equivalent, as a condition of admission to a medical college. The Board has abolished reciprocal arrangements with other states, for reasons which will be given in our next issue by the Secretary.

FOR SALE

An operating-chair and compressed-air tank. They may be seen at J. Menver's, 8 Fourth St. S. E., Minneapolis.

OFFICE POSITION WANTED

A trained and experienced nurse desires a position in a physician's office for clinical work or as office nurse. Position in a large western city preferred. Best of references. Address R. M., care of this office.

PRACTICE FOR SALE

I will sell my practice in Minneapolis for a moderate price, as I am going to the coast. No better location can be found in the city, especially for a physician coming from the country. Address W. S., care of this office.

PRACTICE FOR SALE

Good country practice in village of 600 inhabitants near Chisago Lake (not far from the Twin Cities). Population 600; mostly Scandinavians. Office has been used by physicians for 22 years; rent cheap. Address T. L., care of this office.

PRACTICE FOR SALE

Splendid opportunity to acquire a \$6,000 Minneapolis City practice. Office furnishings, medical appliances, and apparatus cost \$3,500. I am leaving the city to engage in other business on the Pacific Coast, and will sell the furnishings, appliances and apparatus for 25 per cent less than cost, and throw in the good will and practice if transferred soon. Address S. M., care of this office.

TO THE PROFESSION—X-RAY LABORATORY

I have a well equipped x-ray laboratory, rooms 214-218 American National Bank Building, corner Fifth and Cedar streets, and am prepared to do your radiographic or Roentgen-ray therapeutic work.—W. S. FULLERTON, M. D., St. Paul, Minn.

PHYSICIANS' ATTENTION.—Drug-stores on easy payments, etc. Drug-store positions, United States or Canada. F. V. Kniest, Omaha, Nebr.

DOCTOR: If you want practical post-graduate work during fine season in the delightful city, write for particulars. New Orleans Polyclinic, P. O. Box, 797, Post-Graduate Department, Tulane Medical College.

FOR SALE

A 3,000 practice in village of 500 (splendid farming community) in Southern Minnesota. This includes office furniture, two horses, buggy, cutter, harness, etc. Price very reasonable if taken at once. Address B. M., care this office.

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THE CARE OF PREMATURE INFANTS, WITH SPECIAL REFERENCE TO THE USE OF HOME- MADE INCUBATORS*

By JENNINGS C. LITZENBERG, B. S., M. D.

Professor of Clinical Obstetrics in the University of Minnesota

MINNEAPOLIS

The care of premature infants is a subject that has not been given the attention its importance deserves. In countries where the death-rate is falling below the birth-rate the reduction of infant mortality assumes tremendous importance. The medical profession, by improved hygienic methods and by the study of preventive medicine, is constantly trying to lower the death-rate, but when the deaths exceed the births the subject ceases to be one of hygiene and becomes an important question of public concern, and if the relation of births to deaths is not changed the result will be race-suicide. An English writer has recently said that "the birth and care of a child is the object of civilization, and that personal and national morality and success are measured by that standard. Our success or failure with the baby, which is born every eight seconds, is the measure of our civilization." (Rich.)

It is evident that race-suicide may be avoided by increasing the births or decreasing the deaths, or both, one of which methods the president is trying to do and the other the profession must do; therefore the study of infant-mortality becomes a scientific, social, and political question.

Much has been done to reduce the mortality in infants and children. In the city of New York the infant deaths were reduced 50 per cent by the single measure of improving the milk supply. Much more may be done by other hygienic and dietetic measures, and the care of the premature infant is not the least of these.

A study of the literature shows that between

15 per cent and 20 per cent, or one birth in six, of all births are premature and that 20 per cent of all deaths during the first year of the infant life are due to prematurity. One child in every five that dies during the first year dies by reason of premature birth, and 45 per cent to 50 per cent of the deaths of the new-born are due to prematurity and congenital debility. The chief cause of infant-deaths is diarrhea, yet prematurity kills half as many. Does it receive half the attention? I think not. It certainly seems that these facts are not appreciated, or the care of these babes would not be so generally neglected. We are neglecting the subject, which is second only to intestinal infection in the cause of death in infants.

This paper has a twofold purpose: first, to call attention to a neglected subject and to impress the importance on the profession; and, second, to point out that the principles underlying the care of premature infants are simple and applicable in the country as well as in the cities, and that these babies may be well cared for in the home and many precious lives saved which are now sacrificed on the altar of indifference. I am a thorough believer in the modern incubator and in the employment of trained nurses, but I shall have nothing to say about them, because I am pleading for the premature baby born in the country away from the possibility of scientifically constructed incubators and expert nurses. Because the conditions and equipment are not ideal is no reason for not doing all that is possible under the circumstances.

*Read before the South Dakota State Medical Association, May 29 and 30, 1907.

A well appointed operating-room with trained nurses and skilled assistants is undoubtedly the best place to perform an appendectomy, but many of you have obtained perfect results operating in the kitchen of a farm-house. There are three main principles to remember in the care of premature babies:

First. Maintenance of an even temperature.

Second. Proper feeding.

Third. Avoidance of handling and other disturbances.

Because the sweat glands are poorly developed the child is deprived of one of the chief sources of losing heat, therefore it is unable to stand high external temperatures and may suffer heat-stroke. (Morse.) The heat-regulation centers are poorly developed, and they cannot stand low temperature. We see that they must be protected from both heat and cold, which is best done by the incubator or some substitute therefor.

In this paper I shall say nothing about the various types of steel and glass incubators, automatically regulated, but shall confine myself to the consideration of the substitutes for the incubator, because I wish to urge that it is the care, and not the instrument, that saves these babies, and while admitting its value when available, it is not absolutely necessary. Morse of the Harvard Medical School says: "I prefer in private practice at least some substitute for an incubator to the incubator itself," and Dean Richardson says that he prefers the padded crib. If such authorities prefer the substitutes, even when the incubators are available, there certainly is good reasons for their use in the country. The best substitute is the padded crib or clothes-basket; however, any receptacle of proper size may be just as useful, such as a packing-box, a trunk, or even a bureau drawer. The basket may be padded thickly with cotton, but I prefer woolen blankets because the heat is retained and the child is not so liable to be affected by sudden changes in the temperature of the room.

The ideal incubator should have an abundant supply of fresh, pure air kept at a constant temperature. Morse says he has never seen one that would do this, and that is the reason he prefers the crib, as the baby then has constantly pure, fresh air to breathe if the room is properly ventilated, and he urges that, in addition, advantage may be gained by having the baby breathe air that is slightly cooler than the air of the incubator would be. The basket is kept at a temperature of from 85° F. to 95° F., according to the age and condition of the baby, and is registered by a thermometer placed within the outer fold of the blanket surrounding the baby, and not hanging in the crib. Great watchfulness is needed to avoid chilling or overheating, which may be

partially guarded against by taking the rectal temperature of the baby at regular intervals. When an open basket is used the room must be kept very warm, never being allowed to go below 80° F. The baby must have a room to itself, with good ventilation and the sunniest and quietest in the house. Things which would cause loss of heat must be guarded against, e. g., the baby must never be bathed, but should be oiled at birth and then not oftener than every other day, and this should be done in the basket or incubator and not on the nurse's lap. It should not be dressed in ordinary infant-clothing, but should be wrapped in a soft woolen blanket, the very softest obtainable, or, if fine flannel is not to be had, it may be wrapped about with a soft diaper and then wrapped in a woolen blanket. I cannot understand why the old notion of wrapping these infants in cotton is still tolerated. It is dangerous and costs lives. Even the quilted-cotton wrappings are not warm enough. De Lee says: "The Chicago Lying-in Hospital has received twenty or more infants completely refrigerated even though oiled and wrapped in cotton." It is very difficult to overcome tradition, and it has become a tradition to oil premature infants and wrap them in cotton. Common knowledge ought to teach that woolen clothing will prevent radiation better than cotton, and we apply this principle to mature children and in our own dress. Why then not use better judgment and give these premature ones, who need it infinitely more, the benefit? If it be thought advisable to use any garment at all the bag-dress without sleeves is the best. I prefer a small blanket about a yard square wrapped about the baby and folded up from the feet to the shoulders. The baby is then covered with a light flannel blanket so arranged that a sort of hood is made about the head. Often, even if the incubator be warm, the baby will have cold feet, in which case it is wise to lay a warm-water bag under the feet. It must be remembered, however, that this may elevate the baby's rectal temperature, which must not be mistaken for a true fever.

DIET

An attempt to feed a premature infant modified cow's milk will almost surely meet with disaster. Nothing can equal human-breast milk, which must be obtained to get good results. Unfortunately, the premature infant thrives best on the milk of a mother who has nursed her baby for some time, preferably about two or three weeks. Premature babies do not seem to thrive on colostrum, hence it would be better to obtain the milk of another woman, even at the cost of great effort, till the colostrum has disappeared from the mother's breast. Feeding must not be

delayed, but must begin soon after the birth, because of the great loss of weight. Every ounce that is lost means a great deal, especially when the baby weighs near two pounds. Very young infants, those weighing less than three pounds, will require that the milk be diluted. The diet-table compiled by Dr. J. B. DeLee, and used at the Chicago Lying-in Hospital, makes the best working basis that I know of. I take the liberty of reproducing it here.

FOR INFANTS WEIGHING LESS THAN THREE POUNDS

First day, every 30 minutes, 15 drops water 1 part, milk 2 parts.

Second day, every hour and 30 minutes, 15 drops water 1 part, milk 2 parts.

Third day, every hour and 40 minutes, 15 drops water 1 part, milk 2 parts.

Fourth day, every 1½ hours, 1 dram water 1 part, milk 2 parts.

Fifth day, every 1½ hours, 1 dram pure mother's milk.

Sixth day, every 2 hours, 1½ drams pure mother's milk.

Seventh day, every 2 hours, 2 drams pure mother's milk.

FOR INFANTS WEIGHING LESS THAN 3 POUNDS, 12 OUNCES

First day, total quantity 2 oz., ½ dram, every hour about 45 drops.

Second day, total quantity 4 oz., 1 dram, every hour about 75 drops.

Third day, total quantity 5 oz., every hour about ½ dram.

Fourth day, total quantity 6½ oz., every hour about 2 drams.

Fifth day, total quantity 7 oz., 2 drams, every hour about 2¼ drams.

Sixth day, total quantity 7 oz., 4 drams, every hour about 2½ drams.

Seventh day, total quantity 8½ oz., every hour about 2¾ drams.

Eighth day, total quantity 9 oz., every hour about 3 drams.

Ninth day, total quantity 10 oz., every hour about 3½ drams.

FOR INFANTS WEIGHING FROM 3 POUNDS 12 OUNCES TO 4 POUNDS 9 OUNCES

First day, total quantity 4 oz.

Second day, total quantity 5½ oz.

Third day, total quantity 8 oz.

Fourth day, total quantity 9 oz.

Fifth day, total quantity 10 oz.

Sixth day, total quantity 11 oz., 2 drams.

Seventh day, total quantity 11 oz., 7 drams.

Eighth day, total quantity 12 oz., 5 drams.

Ninth day, total quantity 13 oz.

Of course experience has taught that milk formulæ cannot be followed exactly with mature infants. The same fact holds true with premature infants with even more force, but these tables will be found to be about right, and you

can modify them to suit each case. If the child does not get enough food it will lose weight and may seem stupified and may be subject to attacks of collapse even with quite marked cyanosis. On the other hand, an overfed child will be subject to indigestion, and if it is overfed and regurgitates it may choke, hence each infant must be carefully watched so that it may get "just enough." It is usually best not to put the child to the breast even if it can nurse, because the handling might cause too much disturbance, but it is better to give the milk from a small bottle with a very small nipple. It may be fed with a medicine-dropper.

If the baby cannot swallow, it will be necessary to introduce the food through a soft catheter. This method is accompanied by considerable shock. Sometimes one may avoid the use of gavage by giving the milk through the nose by means of a soft catheter inserted a short distance, the milk being allowed to run into the posterior nares and trickle down the throat into the stomach. A child will often be induced to swallow by this method even when all others fail.

The baby should be fed without removing it from the basket or incubator. As soon as the disturbance will not be too great the baby should be put to the breast, for nothing equals nursing. If cyanosis occurs, stimulation is called for in the form of brandy or whisky, 1 or 2 drops, or strychnine, 1-1000 of a grain.

On account of the warm surroundings and the thin skin, evaporation takes place rapidly and the baby literally dries out, therefore plenty of water must be given. I have seen a premature baby that dried up almost like a mummy before it died because the mother neglected this important detail, and the air of the incubator must be kept moist also by a sponge hung in it.

The mother's milk may fail and human milk be unobtainable. Then substitute feeding becomes a necessity. In this case start in with whey diluted with an equal amount of water gradually increasing to pure whey, after which cream may be added in increasing quantities.

BATHING

I have said before that premature infants should not be bathed because the shock attendant upon the handling may result in collapse. Many authors advise smearing the body of the babe with oil or vaseline. This is also very bad practice, for it causes severe chilling. The pores, instead of being filled with oil, must be kept open, or the baby will fail.

For cleanliness the body may be smeared with oil or sweet lard, which must be completely wiped off with a soft hot towel as quickly and with as little handling of the baby as possible, and the child should be immediately returned to the basket or incubator. This need be done only

every other day. The face and nates may be washed with water when necessary. When the baby is stronger it may be bathed by immersion in water at the temperature of 102° F. or 103° F. for a minute and quickly dried in a hot towel. A baby must be quite strong before this method is employed, and as vigorous as a full-term baby before the ordinary bath be given. Although we try to avoid handling the baby as much as possible it needs massage and moving of the joints. In the very young ones a very gentle general massage may be given four times a week, and the older ones every day. The stimulation of the rubbing, if it be not too rough, will do them good. The child should not be allowed to lie in one position too long though it should be on the right side most of the time for the first few days because of the foramen ovale. The infant should be weighed as often as every other day, and must be weighed naked. An accurate record of the weight is necessary, and can be determined only when the baby is naked.

REMOVAL

The baby is kept in the basket or incubator until it weighs about four and one-half pounds, depending on its conditions, age, and vigor. The removal must be very gradual and should not be begun until the baby has had a continuously normal temperature for days. The prognosis depends upon the period of gestation, weight, and care the baby receives. Care and attention to the minutest details will do more than high-priced incubators. These babies need a day and a night attendant.

Premature infants run a slightly elevated temperature when they are doing well, and a sub-normal temperature is a sure sign that the baby is doing badly.

In conclusion, I want to describe a simple home-made incubator that any one can make at a very small cost. It consists simply of a box 24 inches long, 20 inches high, and 18 inches wide. Eight inches from the bottom is a false bottom dividing the box into two chambers, the heating apparatus being in the smaller lower chamber and the baby in the upper one. The false bottom is the support for the bed of the baby and does not cover the whole bottom of the box, a space of four inches being left at one end for the circulation of hot air. The top of the box may be fixed on hinges or to slide, which is better. There is a pane of glass in the top so that the baby may be watched, and there are two ventilating holes near the end of the cover opposite the place where the hot air enters. An ordinary pillow is laid on the false bottom for the bed. The incubator is heated by bottles filled with very hot water and placed in the lower chamber through a small door in the side of the chamber. Fresh air enters this door, passes over

the hot bottles, is heated, and ascends by the way of the six-inch space at the end of the box to the baby's chamber and out through the ventilating holes in the top, giving a constant supply of warm, fresh air. A thermometer is placed in the incubator beside the baby or, better, beneath the first fold of the enveloping blanket.

By watching this thermometer a fairly constant temperature can be maintained by frequent filling of the bottles. This is the method usually advised for heating the incubator, but practically it does not work satisfactorily, so I have devised a hot-air radiator made of ordinary 3-inch eaves-spouting, which I have used with success. A temperature varying not more than two or three degrees is easy to maintain. I have kept this simple incubator with this radiator at the temperature desired for weeks and with not an unusual amount of watching. The heat from the chimney of an ordinary lamp enters the spout-radiator through an elbow an inch or two above the chimney. This elbow curves upward toward the box, which it enters by way of a hole in one end of the chamber where the spout divides into two parts to give more radiating surface. These two branches unite at the other end of the box, and the warm air passes out through a hole in that end, without entering the chamber in which the infant is. Thus the products of combustion in the lamp do not enter to injure the baby. The air to the baby enters by the door in the side of the box described before, is heated by the hot pipes and ascends to the baby. Over the discharging end of the radiator is a cap with a hole one inch in diameter. This discharge hole, being very small, keeps the hot air from rushing through without radiating its heat. Any one can build the box, or you can use a packing-box, and a tinner can put the radiator together in a few minutes from the spouting he has on hand in his shop. The whole thing costs but a dollar or two, and I can assure you it will be a surprisingly satisfactory incubator and, to my mind, much better than the crib or basket. This box can easily be made collapsible so that the whole thing can be slipped under the seat of the buggy and can be set up complete in less than five minutes. Specifications for making the incubator are as follows:

Get a board an inch and a half thick, ten inches wide, and twenty-one feet long. From this cut six pieces two feet long and one piece 18 inches long. On four of the two-foot pieces nail a small cleat, the full width of the board, one inch from each end. Eight inches from the edge of two of the two-foot pieces nail a cleat parallel to the long way of the piece and on the same side of the piece as the small cleat. In the center of the 18-inch piece cut a hole 3¼ inches in diameter. Now set the pieces with the long cleats on edge. The cleats will face each other and be eight

inches from the floor. Place one of the 18-inch pieces with the hole in it against the end cleats of the two side pieces and fasten them there by means of two hooks screwed into the short edge of the side pieces, the hook fastening in a staple or ring in the 18-inch piece. Fasten the other end in the same manner, and then place the radiator in the two holes at the end. Now lay two of the 18-inch pieces on the long cleats, and you have the false bottom or bed support. The other two-foot pieces with the cleats are now put together with the two remaining 18-inch pieces, with hooks arranged as described, and when put together they are placed on top of the first set and securely fastened, thus making a box 18x20x24 inches. There now remain two of the two-foot pieces, which are fastened together with several cleats to make a top. A hole about 8 by 10 inches is cut near one end of the top for a window for observing the child, and still nearer the end are cut two ventilating holes about two inches in diameter.

DISCUSSION

DR. D. W. CRAIG (Sioux Falls): I had the great pleasure a few years ago of seeing Dr. B. DeLee demonstrate his new incubator in the Chicago Medical Society. It is very useful for city practice, but not at all practical for the country.

This one before us certainly will fill a long-felt want, and for my part I am going to have one if I have to make it myself.

While listening to this paper I thought of one or two cases that I have had the pleasure of observing. One was a case of Cæsarian section in which the baby had to be placed in an incubator, and it was kept there for a number of weeks before it was strong enough to live outside of the incubator. Then there was a case that I had in Sioux Falls that died on account of not having an incubator. If we had had one of these incubators it would have had a much better chance to live.

DR. LITZENBURG (Essayist): This is simply a substitute for the more elaborate incubator, for use in the country, and I can assure you it works because I have used it, and have kept it at a temperature not varying more than four degrees for weeks at a time.

The principles that underly the care of premature infants are simple, and anyone can apply them. All they require is care. I thank you.

PRESIDENT'S ADDRESS TO THE HENNEPIN COUNTY MEDICAL SOCIETY*

By JAMES E. MOORE, M. D.

MINNEAPOLIS

Members of the Hennepin County Medical Society: It is needless for me to state that I appreciate the honor you conferred upon me when you elected me your president one year ago, for the honors conferred upon one by his co-workers and competitors are always most highly appreciated.

Our society is now in a flourishing condition and honors everyone whom it admits to membership. We have admitted twenty-two new members during the year and have lost three by death, and our membership is now two hundred and forty-eight. The average attendance has been good, and interesting papers have been read and freely discussed. We have been very comfortably housed at a nominal expense, but our new quarters on Nicollet avenue, into which we are to move next month, are much more desirable, on account of their accessibility. I was greatly pleased over the spirit manifested when I suggested at our last meeting that we spend enough money on the furnishing of our new quarters to make them worthy of our society and something to be proud of. Our committee chosen at that meeting is actively engaged in its work, and we need have no fears as to the result.

Our library is not only enlarging, but is improving. It is already large enough to be improved by culling out broken files of medical journals and obsolete books. In future our space will be so valuable that nothing should be admitted which is not of real value. Our able and energetic library committee have already done much good work along these lines.

We are now a good, smooth-working body. The program is always full, but it is always completed within a reasonable time. Our business is conducted by committees so that the society as a whole has only to endorse their work, thus, with the exception of the annual meeting, leaving the whole evening for the scientific program. Our censors have nothing to do save to guard our portals, for the members have no quarrels.

This society as representative of the medical profession of this great city has a double duty to perform: first, to promote scientific attainments and a true professional spirit in the profession; and, second, to guard the interests of the public in matters concerning which we are well informed and they too ignorant to protect themselves. The first of these duties we have performed so well that we are justly proud of our achievement, but

*Read at the annual meeting of the Society, Jan. 6, 1908.

in the performance of the second we have not been so successful. We are no worse than many others, but that is no credit to us. Our failures along this line are not from lack of interest in the public welfare, but are due to faulty methods and lack of concerted action. In dealing with public matters we always come in contact with politicians, and we fail because we are not politic. The public has a code of ethics different from ours, and until we fully realize this and act accordingly we must expect to be misunderstood and to meet with many disappointments. When we undertake to do something for the public we are too prone to start as individuals, often pulling in different directions, according to our particular fancies, and the natural result is failure. What we must do, if we would succeed, is to get together as a body, formulate our plans for concerted action, and then borrow the methods of the politician and go in and win. Our most common mistake is that we are everlastingly offering to do something for the public without compensation. The people know that we all do more than our share of private charity and give us credit for it, but when we undertake to pauperize the whole community they very naturally resent it. In pursuing this mistaken course we not only fail to accomplish the desired result, but our motives are misinterpreted. The public is very prone to charge our gratuitous efforts in their behalf to our advertising account. The attitude of the public toward us is not what we could wish. It is no more antagonistic toward us than it is toward others who are working for their good, but there is no disputing the fact that they are rather antagonistic, yet this, I believe, is our own fault, and it is up to us to correct it. They can not understand our viewpoint and do not realize that it is possible for a body of learned men to devote time and energy to their interests without some selfish motive back of it. Many of them think, for example, that our efforts in behalf of compulsory vaccination are simply a concerted scheme to make money out of vaccination fees, when we know very well that we could make much more money out of smallpox epidemics. The only real selfish phase of this subject is, that in protecting them we protect our own families. They utterly fail to appreciate the fact that we are a lonely exception in this selfish world and are unselfish enough to be willing to reduce our own incomes for the public weal.

It is very much easier to criticize present methods than to make practical suggestions for their betterment, but I believe that, by concerted and

persistent action and by bringing our influence to bear indirectly, we can be instrumental in bringing about many needed reforms. By indirect methods I mean that we should work as politicians do when they achieve some of their greatest victories, and get others to pull our chestnuts out of the fire. Let us be entirely unselfish in these matters, allowing others to gain whatever of glory there may be in it while we enjoy the satisfaction of having helped the public to help itself. When we wish to inaugurate some measure of public hygiene, for example, we should get some intelligent body of laymen to assume the initiative while we furnish the *vis a tergo* and in this way persuade the public to work for its own good when they would not allow us to do it for them. A committee of laymen has already undertaken to secure thorough and systematic inspection of public-school children, which is doubtless in the interest of everybody, and if we come out in the open and work for it we are liable to defeat it, because the unreasoning public will at once accuse us of trying to secure positions and advertising facilities for medical men. If, on the other hand, we quietly help these worthy philanthropists they are much more likely to succeed. It only leads to opposition for us to offer to do the work for nothing, for public-school children are not objects of charity, and work done for nothing is rarely appreciated. It may be necessary to do some of this work gratuitously at first, but let us do it only when requested to do so. In this way I believe that it is quite possible to demonstrate the value of this work, so that the public will appreciate it and eventually will be willing to pay for it as they should.

The following is an extract from a letter received today from a Minneapolis educator who is now taking post-graduate work in Columbia University:

"Apropos of the agitation of medical inspection in the Minneapolis schools, I have been interested to learn the methods and the practical results of the New York system. I have always had great respect for the medical profession as an educative force, and nowhere is that any more clearly revealed than in the effective work of the health department in school inspection as far as means will permit. The inspectors aim at the prevention of disease and of unsanitary conditions, and they not only bend their energies to bring to light unfavorable conditions, but, through an admirable 'follow-up' system, they do much to force upon the ignorant and careless the remedial value of efficient school-health inspection."

I never have been, and am not now, in favor of existing laws governing the practice of medicine in our state. Our law provides for the li-

censing of practitioners of medicine after they have spent four years in the study of medicine in an institution with high entrance requirements and have finally successfully passed a rigid examination before our State Board of Medical Examiners. The practical working of this law is, that every year we are excluding from our state honest, educated men who have met all of these requirements, save the last, while uneducated and dishonest men continue to do business, asking no favors of the Board, for so far the few feeble efforts to enforce the law have always met with failure. Is this not offering a premium on incompetency and dishonesty? Is it any wonder that the laity look upon this law as one to enable practitioners already established to keep competitors out, a species of trades-unionism anything but creditable to us? I believe that we should have, and that we eventually will have, if we work for it, a law requiring every one who expects to care for the life and health of the people, no matter what pathy or ism he proposes to practice, to spend several years of faithful study of the human body and its ailments in institutions controlled by the state, at the end of which time he will receive a diploma that will enable him to practice in any corner of this broad land. We need not worry about how patients would be treated by these educated men, for it is only the ignorant and vicious who resort to objectionable methods. I look upon licensing physicians as humiliating in the extreme, because it places us in a general mixup with osteopaths, horse-shoers, and barbers, to whom the state gives license to keep the other fellows out, and with the saloon-keepers whom it licenses for its own emolument. The evident intent of the law is to protect the public, but in this it utterly fails in Minneapolis, for there never was a time in the history of our fair city when flagrant and vicious quackery was more in evidence than it is now. Some of our daily papers publish glaring advertisements of these impostors promising to perform the impossible or to perform the possible in an impossible manner. Untruths in some of these advertisements are so flagrant, and the evidence of intent to defraud the public is so plain, that one can scarcely believe that they could deceive, but we all know that they do. It is but fair to state that some of our papers refuse to accept these advertisements. It is also pleasing to note that most of the advertising of professional abortionists has disappeared, largely due to the efforts of one man who has made their suppression his life-work. He has reached the papers through their pocketbooks,

seemingly their only vulnerable point. A number of this loathsome tribe of abortionists have recently been sent to the penitentiary.

Faulty as our laws are, much of this quackery and crime can be suppressed if it is undertaken by the right people and in a proper manner. This is really not so much our affair as it is that of those outside of the profession, for it is not our money these vampires get, it is not our families who suffer for their misdeeds, but, I believe, it is the duty of the members of this society to get busy in this matter, because we know how great this evil is. We should not undertake it as medical men, but as public-spirited citizens who are particularly well informed on the subject. Here, again, we can accomplish more by furnishing information and encouragement to other public-spirited citizens outside of the profession, for whenever we appear as prosecutors, either as a society or as individuals, these wily impostors pose as martyrs and claim that they are doing so much good and doing so large a business that we are jealous of them, and they will have the jury with them every time. Our law provides for the licensing of practitioners by the Board and makes it a misdemeanor to practice without a license punishable by a fine of fifty dollars or confinement in jail for a few days, or both. It also gives the board power to revoke the license of a practitioner for unprofessional conduct, but if they have exercised this prerogative I have not heard of it. The law gives the Board no special power to enforce the penalty for its violation, nor does it suggest that it act as prosecutor. The chances are that most of the quacks are practicing without a license, and if they are not it is very evidently the duty of the Board to revoke their licenses. When this is done they will all be in open violation of the law, and all that is necessary is for anyone to place the proper information before the prosecuting attorney, when it will be his duty to prosecute them just as he would any other class of criminals.

I would suggest that this society get some body of laymen, the proper committee of the Commercial Club, for example, interested in this matter, and that we furnish the evidence for them while they see that the law is enforced. The law is, in my opinion, a very faulty one, but its enforcement would accomplish a great deal of good. As it is now the ignorant and the vicious are openly violating the law because no one has taken sufficient interest in the matter to see that it is enforced. We should bring the proper influence to bear upon the newspapers to prevent quack ad-

vertisements. Many of the papers are daily violating the postal laws by some of their advertisements, and it is our duty to see that this is stopped.

Before closing, I wish to take up a more pleasant theme, viz., the wonderful change made for the better by the medical profession of Minneapolis within the past twenty-five years. In 1882 I found this a big, overgrown, country town of about eighty thousand people, and the streets paved with mud. Since that time it has grown to a beautiful city of over three hundred thousand inhabitants, and with paved streets, beautiful boulevards, and everything that goes to make up a great city; and the medical profession, with everything pertaining to it, has ever kept well in the front ranks of progress. At that time there were but two hospitals in Minneapolis, and they were of very limited capacity, neither of which would compare favorably with our poorest hospital now. At the present time our City Hospital alone contains two hundred and twenty-five beds, and altogether, we have sixteen hospitals with over thirteen hundred beds, to which more are constantly being added, for, notwithstanding this large number of beds, Minneapolis surgeons are frequently obliged to keep patients waiting for lack of hospital accommodations. Most of our hospitals have well-equipped operating-rooms, in many of which as good surgery is being done as is done in any city of any size or in any country. Minneapolis is now recognized as a great medical center, to which people flock from every part of the country, and is already a center for medical education of first rank. Surgery as a whole is better done by representative Northwestern surgeons than it is by the surgeons of old Eastern cities, because we are not handicapped by tradi-

tion and are not obliged to wait for dead men's shoes.

This society was in existence in 1882, but, like most country societies of that day, was noted more for its quarrels and dissensions than for its scientific work.

Soon after my arrival, a new society, the Society of Physicians and Surgeons, was established by the younger men and the newcomers, of which I had the honor to be elected the first president. This society began active work and flourished for several years, and at the same time the Hennepin County Society took on new life, so that eventually the two societies were merged, since which time our progress has been uninterrupted. Matters ethical were so bad at the beginning of my residence here that they had a tendency to discourage a young man rather than to encourage him. It is extremely pleasing to note the difference between then and now. At the present time our city is full of young medical men, many of whom we have educated ourselves, and they are endowed with the true professional spirit and are constantly seeking for better things. They are too busy in good earnest, scientific work to enter into petty, personal bickerings,—a body of men of whom any city might well be proud. Every specialty is well represented by competent men, and we have a full and worthy representation at every special and national society meeting.

Let us continue this good work by constantly endeavoring to improve, by helping and appreciating each other in our work, by always boosting, and never knocking, so that the medical profession in Minneapolis may be pointed out to the whole country as a shining example of scientific attainments and ethical conduct.

FROM A BUSINESS STANDPOINT*

By A. D. HOIDALE, M. D.

TRACY, MINN.

I believe that the man who has an ambition to make money; to make that money in an honorable and honest way; to make it, not because he *loves* the money for itself, but for what good it will do through him, for himself and, in turn, for humanity in general, has a laudable ambition. There are misers who worship the coin itself, and others who hoard it until they have accumu-

lated a fortune; simply because to be looked upon as rich is the height of their ambition, having really no worthy object in view for its use. Others again want money that they may dominate men and markets, and not a few want money simply to gratify their lust for frivolous pleasures. Men such as these make the world anything but better because of their unworthy ambitions and their fulfillment.

But for what does the physician want money,

*Read before the Lyon-Lincoln County Medical Society, November 5, 1907.

speaking now of such money as would be a surplus after he had fed and clothed himself and his in a fairly becoming manner, allowing also a sufficient sum for a judicious taking in of "side-shows"?

Let us begin with a young man starting in the practice of his profession. As a rule, he does not possess enough worldly wealth to even get decent furniture for his office. Then, if he begins by simply sitting at his desk and writing prescriptions, as soon as he is able it should be his ambition to add all necessary and approved therapeutic appliances to his armamentarium. He is fresh from school, and the best teacher he can get for a few years is experience. But the present time is one of tremendous progress in all lines, and never has medical knowledge piled up so fast. The young doctor soon finds that he grows old quickly with respect to his knowledge. Here comes in another use for money. If he wants to be progressive, wants to become a success in his chosen field, and, by being successful, do the most good to those who place their ailments in his care, he must study, and not only spend money for books and periodicals to study at home, but he must go to the great centers of medical knowledge, mingle with men great in the profession, and learn from them—become inspired, renew his faith in the good work upon which he is enlisted, and advance his knowledge and ideas up to the highest standard. This must be done time and time again, especially by the country practitioner. This requires money, and money thus spent is worthily spent, because not only does the physician himself benefit by it, but also his clientele. To bring this part of the discussion to a close, a doctor should be ambitious to acquire money in sufficient quantity to live well, to keep his office supplied with all necessary therapeutic appliances, to be able quite often to do post-graduate work, and, last but not least, to have a surplus for old age which will be enough to keep him in comfort and give him the rest and some of the pleasures he missed while engaged in one of the most, if not the most, strenuous vocation a man can choose.

Having now decided that a doctor really has need of money, and can use a goodly sum of it each year in a manner which should be of advantage, not only to himself, but also to the public at large, the next question is, how shall he become the possessor of this necessary sum?

It is a fact that many doctors are busy men, who scarcely have time to eat and sleep properly, who attend strictly to business and do not

allow themselves necessary recreation nor feel that they can conscientiously leave their patients for even a few days during the year for a little trip, which will carry them away from the insistence of daily labors. They are economical, too, not spending anywhere near as much for the comforts and luxuries of life as many men who work on a comparatively small monthly salary. And still these hard-laboring, day-and-night doctors practically live from hand to mouth and have no surplus cash to show as a result of their work. Why is this so?

Before we take up the discussion of the various factors which may have a bearing upon this deplorable condition, let us first take into consideration how much money a man at the present time invests up till the time he is seated at his desk, prepared to greet his first patient. We will leave out of our reckoning the time before he starts on his career as a medical student. He then has before him six years to fit himself for the practice of his profession. With strict economy, he may possibly not spend much more than three thousand dollars. Supposing that, instead of becoming a medical student, he had an ambition to become a clothier, and had entered upon his duties as a clerk in such an establishment. With the same strict economy as he applied in getting through six years of medical college life on three thousand dollars, he would easily, in six years' service as a clerk in a clothing store, save two thousand dollars. Then allow the young physician graduate one thousand dollars to fit up his office, and humbly at that, before he is ready to practice, and we have a total of six thousand dollars invested, which is, no doubt, six years' service as a clerk in a clothing-store, clerk this six thousand dollars, with six years of experience in the business, and let him begin business for himself. At the very lowest, let us allow him a profit of ten per cent on his investment above the expenses necessary to conduct his business, and seventy-five dollars per month for his own services. This will give him a clear income of fifteen hundred dollars per year. Let him apply the same amount of study, and attend as strictly to business as the faithful physician, and then tell me, is there any question as to which course, the clothing-house course or the medical-school course, will net the surest and best returns in money, year after year? And is there any comparison to be made between the dangers, risks, and inconveniences suffered? Truly, under present conditions the medical man gets the bad end of the bargain both from a financial

standpoint and as regards the physical comforts of life.

We now come to the consideration of the causes underlying this lack of financial success in the medical profession. Verily, when we ponder upon this subject, we must admit that the profession is composed of men who are almost as a unit the most consummate "E. Z. Marks." We undervalue our services; we calmly allow ourselves to be the dupes of dead-beats; we do more charity work than the rest of humanity combined; and never dictate to our patients when they should pay their bills,—they can pay when they feel inclined to do so, and if they never happen to feel such an inclination steal over them, we simply let the bill go by default.

To summarize: we have to deal with several factors important in this discussion.

First: An undervaluation of our services, leading to inadequate remuneration, which brings up the question of—(a) Fees.

Second: An undue amount of service rendered to people who plead inability to pay, which brings up the question of—(b) Charity work.

Third: A most unbusiness-like manner of keeping accounts, rendering statements, and letting those indebted to us feel that they can pay the doctor after paying all other bills and spending such money as they wish on themselves, if there is then any to spare, which brings up the question of—(c) Collections.

These three points, I believe, cover the most vitally important factors of financial interest. Now that we have reached this point and have correctly diagnosed the difficulty, here comes the application of the remedies, but I fear that we have found this matter easier of diagnosis than will be the task of finding suitable remedial agencies. Here we must beg to offer only a few thoughts and suggestions, under the various headings, which may provoke from you, likewise, such thoughts, suggestions, and experiences as may come to your minds during the reading of this paper.

(a) Fees are to a certain extent governed by local conditions. The cost of living, the population within a given area, and the average prosperity of the community, all have their influence upon this question. It is a notable fact, however, that while the cost of living is steadily on the increase, farmers getting more for their produce, manufacturers steadily raising the price of their products, artisans and laborers combining, demanding, and getting, too, more for their work, we calmly sit still, stuck in the old rut and don't

dare to move. In our district I do not think that, for example, any patient should come up to a doctor's office with the expectation of paying less than a dollar. Our present fees for town and country calls are none too high, and there is one point in connection with these which needs revision. Suppose you are in your office, busy with office-treatments. The telephone rings. You answer it, and Mr. A. says he wants you to come right down to the house without delay. You have to desert your office on a moment's notice, let some work go for the time being, at least, some of which may not come back. Perhaps Mr. A.'s baby had a convulsion, and it is all over by the time you get there anyway, but you leave a few calomel tablets, and instruct them to give the baby a dose of castor oil following the tablets. The baby is all right, and you may not get a call to Mr. A.'s home again within a year. Now, is one dollar sufficient remuneration for your neglect of your office, your hurry and inconvenience in general? Certainly not. The same applies to just such calls out into the country. When you have a case upon which you make regular calls and you can time your visit to conform to your convenience, it is a different matter, and a decided distinction should be made between the fee for a regular and an emergency call.

Our whole fee-bill needs revision. It should be more definite in many particulars, and in others, where conflict of opinion might exist, it should be explanatory. A word as to country work. You are called out to Mr. B.'s. Never there before. Someone tells you it is eight miles. You charge eight dollars. Perhaps Mr. B. says that is cheap. Doctor X. always charged him nine dollars, or perhaps he grumbles and says Dr. X. charged him only seven dollars. In either event you suffer a loss. In the first place, you lose a dollar and some of your self-respect, because, even if you find yourself a cheaper man by mistake, the sensation isn't pleasant. In the second instance your patient is dissatisfied because he has to pay you more, and feels that he is suffering an injustice at your hands, so he very easily makes up his mind that Dr. X. will do first-rate after that, and you lose a patient. There is a remedy for this, and one which seems to me will be entirely feasible, as well as being a great aid and comfort to each individual physician. Take a country plat, map out a certain radius of miles around each town embraced in the Society's district, and fix the exact mileage to each farm house. A list of these farms could then be made out alphabetically, using the known name of the

farm where tenants occupy the place. The charge for ordinary visits to each place could then be decided upon and noted in space after the farm name. In this manner, physicians acting in good faith, would need have no confusion as to what to charge. The minimum charge for going out of town should not be less than three dollars, even though the distance be but a mile.

The people will not value us any higher than the value we put upon ourselves. The man who has no respect for himself does not win the respect of others. *We* must uphold the dignity of our profession; others will not do so. If we are cheap, or if we enter into competition on the prices of our services, we lower our dignity, the public rightfully loses respect for the profession, and even our advice and the medicines we prescribe will do less good when coming from a cheap source, and for obvious reasons. Let us, then, get together on the fee question, act in perfect good faith, and keep that faith when once we subscribe to it. With us as with all else, it is "United we stand, divided we fall."

(b) I sincerely believe that practically all of us do too much charity work, and do it in such a way that it is a detriment both to those who receive and to those who give. Truly, this is "love's labor lost" in many cases. We should realize that when we give our time, knowledge, and skill to our patients, we give our stock in trade, just as much so as a merchant would if he picked goods off his shelf and handed them over to whosoever felt unable to pay. Our merchants do not do that very often. They tell the applicant to see their county commissioner about it and get an order from him. Then, if that merchant delivers the goods, when he presents his bill to the Board of County Commissioners, does he allow them to cut that bill in two, or even more, and then meekly accept their dispensation? Not much. Physicians do, however. There are worthy cases where unstinted charity should be dispensed, but we should act with great discrimination. Remember that those whom we place under obligation to us are more apt to be our enemies than our friends in the end. We should give all who seek our services an opportunity, at least, to pay for those services in some manner. Let the scrub-woman scrub for you, the washer-woman wash for you, and, while out of pity for her destitute condition you may limit her services to a fraction of the actual bill you have against her, give her a receipt in full when you have done with her and thus save her self-respect and help her to be a worthy woman. Then you may count

on her as your friend. When you render service to such as you know can pay only a portion of what your services are worth, but they will pay what they can, accept that, and give them a receipt for the full value of such services. This, I believe, is good policy.

(c) Now, we come to the hardest proposition, that of collections, and the one on which we are probably the most derelict. We are very indifferent collectors, indeed. It is galling to be fully aware of the fact, too, that the very ones with whom we are so easy and whom we let bide their own good time and convenience—a time which very often never comes—have less respect for us as a consequence. People verily have more faith in the professional ability of a physician if he is also a good financier. If he is a success financially he must be a success professionally, according to their line of reasoning. If we are to be financially successful we must get what we have rightfully coming to us as the result of our labors. Ours is a business on a credit basis almost entirely. If our patients do not come up voluntarily to pay their bills, we dislike to send statements for fear of offending them. If they disregard our statements when we finally need money so badly that we have to send such, we simply hate to speak to them personally about the matter. And when we have spoken, and received promise after promise, we finally give it up and go no further in the matter. In doing this, in many cases, we lose not only the money, but also the respect of these very people. We have to force some people to be honest, and it is morally good for them to be thus forced.

The methods used by many dishonest people to obtain medical aid with no intention of paying for it are probably familiar to us all. They will run an account with one physician until they think he sours on rendering them further service without being paid. Then they proceed to the next and the next, and, finally, when they have gone the rounds they will pay a dollar or two to some one of the physicians to renew good faith. As a rule, a judgment against these people is of no value; and even if it should be, they are not much afraid that a physician will bring suit. Another class, who work on monthly salaries, will employ the same tactics, keeping their accounts, if possible, below the garnishment limit with each doctor, and if by accident it goes above that limit, they pay the amount necessary to bring it below the limit when they fear garnishment proceedings.

In reading the Medical World, I came across

the "Articles of Agreement" of the Duquesne (Penn.) Medical Society, and I think it is a plan that does much for the financial betterment of its members. It is obligatory upon each physician to submit names of such of his patients who have persistently refused or neglected to settle their accounts within a reasonable time. These names are then arranged alphabetically to constitute an information-list. Each physician is known by a number, and the number of the physician who reports a name follows that name. When a person whose name appears on the list applies for medical aid to some other physician he is informed that he owes Dr. X.; that he will have to present a certificate from Dr. X. showing that payment of the account has been arranged for satisfactorily. In case of an emergency, the physician called may make one visit for a cash payment, but no more until the certificate is forthcoming. The members of the Society also agree to send statements at stated quarterly intervals, but have the privilege of issuing them monthly. They also have a notification-letter which they send to such patients as they contemplate putting on the information-list, which reads as follows:

Mr. A.:

Dear Sir:—In accordance with the rules of the Duquesne Medical Society, to which I belong, I am compelled to transmit to them the names of such persons as appear on my books as having failed to make a payment on their account recently.

Amount of bill, \$.....

Yours truly,

.....

It is exasperating to deal with people who are dishonest. We are practically forced to do so if we act as individuals, but if we act as a body we can most certainly eliminate the dead-beat, and do the community a real service by teaching many that "Honesty is the best policy." By acting as a body we can also make arrangements whereby we can, in some cases, lump our bills, and make a transfer of them to a party agreed upon, who can take garnishment proceedings or bring suit as the case may demand. For example: Mr. A. has run a bill of \$5.00 with Dr. X., \$8.00 with Dr. Y., and \$9.00 with Dr. Z. In no case is the amount sufficient to bring garnishment proceedings; but put them all together, transfer them to another party, and then proceedings can be taken.

In all these matters we must be united and act in good faith if success shall attend any effort we make. No one individual can act alone and accomplish anything worthy of note. If we decide and act upon such measures as may be agreeable to all, I do not doubt that very soon we shall see splendid results and raise our cash income considerably above what it is at present. The class of patients against whom our crusade will in particular be launched, will soon wake up to the fact that they will have to come to us with a square deal.

I hope that, in taking so much of your time, I have made some suggestions which will be worthy of your consideration. It will now be my pleasure to hear the subject matter discussed, pro and con.

THE NEW ANESTHETIC—HYOSCINE, MORPHINE AND CACTIN*

BY WM. P. LEE, M. D.

FAIRFAX, MINN.

As a country practitioner without hospital facilities, and feeling keenly at times the need of some one to give an anesthetic and also remembering all too vividly a few cases in which, after getting my patient nicely under the influence of the anesthetic, I had turned the anesthetic over to some apparently trusty relative or kind neighbor, and in a few minutes had to cease work and use artificial respiration and hypodermics, in or-

der to have a patient to patch up and not give the undertaker a job and my own reputation a set-back that it would take time and a lot of work to restore, I became interested some time ago in the new method of producing general anesthesia by the hypodermic injection of morphine in conjunction with other drugs.

Believing that the majority of you are having the same experience every day, I wish to give you a brief synopsis of the subject as I find it to-day in our medical magazines and my own

*Read before the Camp Release District Medical Society, October 24, 1907.

limited use of the method. I have collected 300 reports, comprising its use in about 700 cases of labor, and 1,600 surgical operations without a single death due in any way to the anesthetic, and when we take into consideration that these were mostly all beginners in the use of this system and that each report covered, on an average, but five cases, I believe that the dangers have certainly been over-estimated.

The first work in this line was done in Germany by Gauss and Steinbeuchel with scopolamine and morphine, and the few fatal cases reported from there can nearly all be traced to the impurities in the scopolamine.

Chemically, scopolamine and hyoscine are identical, but physiologically we find a great difference, due, in the minds of practically all investigators, to the impurities in scopolamine, which impurities it seems impossible to eradicate in all samples, one lot being practically pure and the next unsafe to use.

We have four alkaloids of identical chemical composition: atropine, cocaine, hyoscine, and scopolamine, and there seems to be as much difference in the physiological actions of the latter two as in the first two.

At the present time the use of scopolamine has been about discontinued, and hyoscine is used in its place, so that we have to consider in particular to-day the combination of—

Hyoscine hydrobromide . . .gr. 1-67

Morphine hydrobromide . . .gr. 1-4

Cactin hydrobromide . . .gr. 1-67

First, I believe it will be best to review each drug separately and then collectively.

Hyoscine.—The action of hyoscine on the central nervous system is sedative and hypnotic. Insomnia caused by cerebral excitement is rapidly quieted by small doses, and a natural sleep follows. It has been used in cases of delayed labor to relieve excessive pain and irregular uterine contractions. Its use is followed by sedation or depression, which constitutes the characteristic action of the drug, and is followed by drowsiness, and, if the dose be full, by deep and natural sleep. Its sedative action is very rapidly produced, and in the majority of cases a calm and refreshing sleep follows. From this sleep the patient can be readily and completely aroused at will.

Morphine.—I deem it unnecessary to review morphine and its uses and actions, except as I shall speak of it later in combination with the other drugs. Hyoscine must in some way counteract the large doses of morphine that are sometimes given with it.

Cactin.—Cactin, from cactus grandiflora, the night-blooming cereus of cultivation, is a heart-stimulant of peculiar action. It does not affect the stomach or the centers as does digitalis. It increases blood-pressure by quickening and strengthening the heart-beat, through direct action upon its nerves.

PREPARATION OF THE PATIENT

Prepare the patient as usual for an operation under any other kind of anesthesia. As the patient rarely is, or need be, profoundly asleep under this method, better results will be obtained if the ears are packed with cotton to shut out the noise.

For operations not very severe, give one tablet, hypodermically, two hours prior to the time decided upon for the operation; repeat this one hour to one hour and a half later, so that at least one-half hour elapses from the last dose before the beginning of actual work.

For huge operations it is best to give one tablet two hours or more before the time for operation, a second one hour later, and a third as the patient is placed on the table. The third dose should, of course, not be given if the first two have produced the desired degree of narcosis.

Under three doses the most prolonged and extensive operations have been performed, such as amputation of the thigh, trephining, abdominal hysterectomy, nephrectomy, etc., and without the use of a single drop of chloroform.

OBSTETRICS

Its field of usefulness in labor is almost unlimited, for under two or three doses delivery may be rendered practically painless, and the most severe obstetrical operations be performed without the knowledge of the mother.

It does not interfere with uterine contractions, the action of the combination of hyoscine and morphine upon the involuntary muscles being practically nil. In labor judgment should be used. If a single pronounced effect is desired, one full dose may be given; but if prolonged effect is essential, half doses should be given, repeated as necessary.

So far as noted in the numerous cases reported, it does not affect the fetus in any undesirable way, except that there may be more trouble in getting the child to breathe than ordinarily; but no fatalities have been reported from this cause.

It is best to give it only after the os has been dilated sufficiently to admit two fingers, though in prolonged "first stage" it may be given any time the woman begins to complain too bitterly.

In threatened miscarriage nothing can equal a medium dose, repeated as necessary.

GENERAL PRACTICE

Hyoscine, morphine, and cactin may be used for the relief of every kind of pain, with the absence of the bad after-effects of morphine when used alone or with atropine, and will, I feel positive, supplant the use of these remedies in everyday work. I have used it in eight cases of renal or hepatic colic with the happiest results.

In the reduction of fractures and minor surgical work it can be given where the patient refuses to take a general anesthetic, either from fear or any other cause.

CAUTIONS

1. The patient may sleep for many hours after the operation, a fact of which friends must be told in advance.

2. The patient may be aroused at any time after operation, but should not be, as much excitement may follow.

3. It should not be administered to patients under twelve years of age nor to the very old.

4. If sleep is too prolonged, strong coffee may be given by the rectum.

5. A pure drug should be used, as atropine in the hyoscine upsets the anesthetic effect.

6. Ether should not be given after this anesthetic. A few drops of chloroform, now and then on an Esmarch inhaler, will be all that is necessary in even the most restless cases.

7. Care should be exercised not to give chloroform unless the patient is very restless. A moment's waiting now and then with a few quieting words will be found better than chloroform.

8. It should not be given in cases of severe heart lesions, nor in advanced nephritis.

ADVANTAGES

1. Dulling of consciousness of even highly nervous patients.

2. The small quantity of chloroform required to completely anesthetize the patient.

3. Ability to withhold chloroform as soon as full surgical anesthesia has been reached, though a few drops of chloroform occasionally may be required during a protracted operation.

4. Absolute absence of pain in many operations, even though the patients are awake on the table.

5. In average cases, when only two injections have been used, the patients are wide awake on leaving the operating-room.

6. The absolute absence of nausea, the absence of thirst, and the ability to swallow water without emesis.

7. The ability in suitable cases to sit up in bed early. This, of course, is of value as a pre-

ventive of hypostatic pneumonia, and to partake of semisolid nourishment often the very day of the operation.

8. Rapid convalescence.

CONCLUSIONS

1. In the H. M. C. combination we have an anesthetic of apparent safety and nearly perfect uniformity.

2. Two doses, one and a half hours apart, supplemented by a few drops of chloroform, suffice to produce surgical anesthesia of at least three hours' duration.

3. There is practically no shock from even prolonged and very severe operations, unless great quantities of blood are lost.

4. There is no post-operative vomiting, which is so distressing in abdominal surgery.

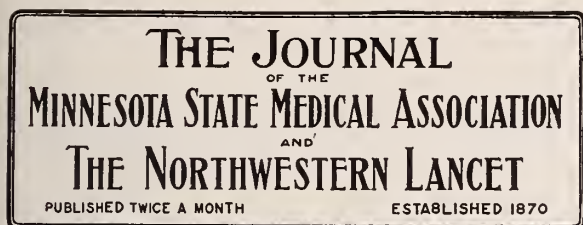
5. There is freedom from pain for many hours after.

To those who are afraid or skeptical, I should like to give the following advice:

One hour before a serious operation, administer one tablet; see how little chloroform will be required and how little post-operative suffering there will be. After a few trials, give one dose two hours before and a second a half-hour before operation; and see how few (especially women) will require any chloroform at all; and, finally, when accustomed to its effects, try the third dose, as directed, in appropriate cases.

THE PHYSICAL SIGNS OF INCIPIENT TUBERCULOSIS

Albert Abrams, of San Francisco, describes certain original methods for the diagnosis of tuberculosis in its incipency. Lung cavitation is not necessarily a bad sign. In health the lungs are resonant in inspiration, dull in forced expiration. In emphysema the percussion note is the same in both phases of respiration. In tuberculosis pulmonary vesicular emphysema exists in the incipient and predisposed state. Another important sign is an extension of the lung borders downward. Unchanged percussion resonance, hyperresonance, and prolonged expiration indicate deficient expiratory force, and constitute the first signs of the pretuberculous stage. Pulmonary anemia characterized by atelectatic zones in the lungs is an important sign. This form of anemia is not benefited by iron. Vibrosuppression, that is, elimination of vibration by pressure on the sternum, aids in obtaining proper percussion signs in the lungs. The author describes the tracheal traction test and the use of the tuning fork in testing conductivity of the lung substance.—Medical Record, February 22, 1908.



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MARCH 15, 1908

The annual meeting of the State Medical Association will be held at St. Paul, October 7 and 8, 1908.

CONSERVATIVE GYNECOLOGY

The old-time gynecologist, in the estimation of the surgeon, has had his day and retired from the field. The man who began and finished his career as a successful gynecologist blossomed into a surgeon and looked upon his former occupation as one of insignificance and beneath his dignity. Of late the practice of gynecology has begun to forge ahead, and it seems reasonable to assume that it may again be raised to its former position of importance and beneficence.

Hörrmann, in an article in the Journal of Obstetrics and Gynecology (Stuttgart), has written an interesting paper on "What Can Be Accomplished with Conservative Treatment of Inflammatory Gynecologic Affections" (Abstract in Jour. of the A. M. A.). The writer refers especially to treatment with "weighting" and with superheated air in inflammatory affections of the adnexa and pelvic connective tissue. The observations were obtained at Amann's clinic in Munich. "Weighting" is the application of a colpeurynter filled with mercury in the vagina.

The application does its work while the patient lies tranquilly in bed. It is especially adapted to chronic inflammatory processes when fixed retroflexion of the uterus is present. The only disadvantage is the stretching which the vagina is subjected to, but this is offset by the quick relief obtained. This method is of diagnostic value also and not infrequently reveals the presence of solid and surgically removable growths and thus protects the physician from serious errors.

The conservative methods of treatment include punctures, drainage, hydrotherapeutic measures, alcohol applications, thermophors, hot compresses, hot vaginal douches, and the use of hot air directly applied.

It is gratifying to note that vaginal and uterine massage is used less often than formerly. It is evidently considered unnecessary and doubtless in many cases unjustifiable and certainly open to just criticism on the ground that, in many instances, it is suggestive manipulation.

When conservative methods are employed for the many gynecologic conditions, a conscientious physician, in country and city practice, is able to relieve much suffering and postpone or prevent many surgical operations that were and are now considered imperative. The field of gynecology is a large one, and good results can be obtained without serious surgical interference if the above methods are carefully carried out. The use of weights and heat alone would prove their value as remedial agents.

Unfortunately, the average physician and the pseudogynecologist relies too much on swabs, applications with various drugs, and the uncertain action of pessaries. They may all have a place in the armamentarium of the physician, but they are not the best methods of treatment and are makeshifts at best.

Practical, sensible, and conservative means, based upon careful diagnoses, will ultimately restore gynecology to its proper place in medicine, in spite of the over-activity of the general surgeon.

ANTIVIVISECTION

Quietly and persistently are the methods employed to encompass the field of the vivisectionist. The New York and New Jersey legislatures have before them bills ostensibly to protect medical science and research work, but, in reality, they are forerunners to prohibit animal experimentation. These measures will doubtless be introduced in every state if they succeed in the East.

The antivivisectionist, like the antivaccination-

ist, does not fully comprehend that his objections are due to ignorance and a narrow point of view.

The United States occupies the front rank in biology and medicine, and any effort to restrict research work that demands the humane use of animals for experimentation should be made impossible. Great Britain committed herself some years ago, and the result is the enforcement of antivivisection laws. Scientists and investigators are obliged to go to France or other countries to carry on their experiments on living animals. If the antivivisectionists could only realize that the study of anesthetized animals is absolutely necessary before human beings can be subjected to operations that show the activity of vital processes, there would be less criticism of the man who is really seeking for information.

The men who work in laboratories and who seek to instruct others in the mysteries of life are conscientious men, and any effort to restrict their work should be vigorously resisted. Unless physicians are alive to the necessity of experiments on living but anesthetized animals, they will be confronted with similar bills to those in New York and New Jersey. The same educational principles should be disseminated as in the literature concerning the spread of tuberculosis and kindred medical topics. Get the information before the people in the simplest and most direct manner, and the majority will come into line.

Publicity of medical topics which are for the good of the people, is the safest means to gain an uncertain point. Take the people into your confidence, tell them of the advantages, explain the humanitarian side of the question, and then faithfully carry out promises made to inflict no needless pain, and the antivivisectionist will cease to be an alarming factor in legislatures.

So far no effort has been made in Minnesota to restrict animal work, but no one knows when it may appear. If it does appear the medical profession must stand united against it.

PERSONAL-INJURY SUITS

This is the season of the year when the courts are more or less crowded with persons seeking redress for real or alleged personal injuries. Cities, railroads, corporations, and individuals are contesting claims for large or small amounts. Juries are pondering over the questions of negligence, direct or contributory, and expert testimony in the field of mechanics and medicine. Judges listen patiently to an array of testimony, relevant or irrelevant, while the air of the court-

room by its foulness irritates, angers, and befogs the minds of the listeners.

The majority of the personal injury cases brought before the courts are unworthy of the consideration and time they consume. Occasionally, a city or a corporation is unable to agree upon the amount that would be a just compensation for injuries received, and the result of the conference between the opposing attorneys is a trial in court. Juries are not very dependable when it comes to adjusting the values of injuries. If the judgment returned is excessive, the case is appealed and delayed until both sides are weary of the contest, and a settlement is effected. The newspapers frequently publish, in display type, the large sums awarded by juries, but when the judgment is reversed, set aside, or an agreement is effected, the news is conveyed to the public in a more obscure place in the paper. In the meantime the attorney for the plaintiff is reaping his reward in the advertising he secures, and not until years have passed does his popularity decline when the people hear of his reversals. Persons injured usually receive adequate money compensation when the case is presented on its merits, and it is shown that the company, corporation, or individual has been negligent or careless. The large numbers of personal injury cases that are settled by mutual conferences are not compiled. If they were the report would be rather attractive to the litigant. In many cases where the injuries are nominal, or where the injured man will recover within a reasonable period, the company, fearing the action of the jury from prejudice or other causes, will pay to the injured person or his representative a sum far in excess of the actual damages.

Then, too, the corporations settle many claims that are fathered by the "shyster" lawyer or the unprincipled expert rather than face the annoyance and wear and tear of a prolonged fight. The scandalous incidents that have been brought to public notice from time to time in relation to personal injuries has had some effect, but is nowhere near the normal plane of honesty. There are still too many unscrupulous lawyers, dishonest doctors, and faking clients who strive for easy money by apparently justifiable black-mailing methods to give up their attempts to hoodwink justice and corrupt juries.

The professional damage-suit lawyer does not stand very high among his associates, and if he gains a sufficient remuneration for his services, he drops this department of law for one that is more dignified and respected.

The dishonest medical expert has no standing and can never attain the respect of his fellow practitioners. He is utterly lost to all sense of what is right and good, and he soon gravitates to the bottom of the medical pit and finds, with his companions, that all who enter there leave hope behind.

During this active season of personal injury litigation let us hope that dignity and self-respect will be the aim of all medical men.

CORRESPONDENCE

VON PERQUET'S NEW TUBERCULIN

Vienna, Austria.

TO THE EDITOR:

Considerable attention is being attracted on this side by the new tuberculin reactions on the skin and eye so developed by von Perquet, of this city. He draws a close analogy between this reaction and that of re-vaccination with cow-pox, for just as a re-vaccinated person may react within 24 hours (in contradistinction to a first vaccinated), so one who has had a tubercular infection develops within 24 hours a hyperemic papular formation at the site of vaccination with tuberculin. A drop in the eye of a tubercular patient likewise produces an inflammatory reaction, but it is sometimes a severe one, and hence objectionable.

The tuberculin has no effect upon the skin unless those antibodies which are present in an organism infected with tuberculosis are present to attack and digest it into a substance which acts as an irritant to the skin and produces the reaction.

Perquet makes the inoculation by means of a small instrument shaped much like a small chisel. The scarification is extremely light, penetrating only the outer layer of the skin, and is made at three points on the inner side of the forearm. One of these scarification points is a "control," made without tuberculin, while the other two have been sprinkled with a drop of Koch's old tuberculin. The papule, which appears within 24 hours in acute cases, is at first scarlet, and later violet and pigmented. A later reaction probably means a healed tubercular focus. In scrofulous patients one sometimes sees lichen-like knots around the center—the so-called "scrofulous reaction."

Many refinements of this test are to be expected; in fact, Detre, of Budapest, is already using besides the "alt tuberculin," filtrates of human

and bovine tubercle bacilli, claiming that a strong reaction to the bovine filtrate proves a bovine infection, while a stronger reaction to the human filtrate than to the old tuberculin indicates a fresh tubercular process.

Such refinements must be further developed before the reaction will be of great diagnostic value in adults, for it is found that a large percentage of adults coming to autopsy show some small hidden tubercular lesion of little significance, and these all react to this test. On children, on the other hand, it has much greater value, and the younger the child the greater is the significance of a positive reaction. Thus we may vaccinate a child who has a bronchitis following measles or whooping-cough to determine its character, so that proper treatment may be immediately instituted. So, also, a child with a swollen abdomen may be vaccinated to determine whether it is suffering with rickets or tuberculous peritonitis. Finally, it might be used as a means of identifying tuberculous children in the kindergarten and primary school, so that they may be prevented from infecting the non-tuberculous.

In conclusion, I may enumerate some of the advantages of this method over the tuberculin injection for diagnostic purposes:

1. It is entirely harmless and can be employed by the busy practitioner during office hours.
2. The existence of fever does not interfere with the reaction.
3. It does not require such careful observation and thus a large element of error is removed.

FRANK S. BISSELL, M. D.

REPORTS OF SOCIETIES

MINNESOTA ACADEMY OF MEDICINE

The February meeting of the Academy was held at the Minnesota Club, St. Paul, on the evening of February 5th. Dinner was served at seven o'clock, and the meeting called to order at eight by the president, Dr. A. J. Gillette.

Dr. H. B. Sweetser, of Minneapolis, presented the following case-reports:

Case 1. Meckel's diverticulum.—This specimen was obtained from a woman 35 years of age who had suffered for many years from attacks of pain in the left side of the abdomen, lasting from a few moments to several days. The only tenderness was over the region of the appendix, and I presumed her pain was due to trouble with the

appendix. This was removed, being strictured, dilated, and containing a concretion. Accidentally the diverticulum came into view and was removed. As you see, the stalk is about two inches in length and about three-eighths of an inch in diameter. The distal end is dilated into an irregular pouch about one inch long and half an inch broad, set transversely on the stalk. Its wall is very thin and transparent, and I think must have been many times in danger of rupture. I have no doubt that the attacks of pain from which she suffered were due to distension of this oblong sac.

Case 2. Pregnant Fibroid Uterus.—This exemplifies, quite graphically, the influence of pregnancy upon the growth of uterine fibroids. This specimen was taken from a woman 34 years of age, married, and the mother of two children, 11 and 12 years old, respectively. One year ago, examination by a physician revealed a very small tumor in the pelvis, so small that she was advised it would never trouble her. Three months before I examined her she became pregnant, and very quickly (within three weeks) a very noticeable swelling appeared. Much pain, of a crampy character, developed, getting constantly more and more severe. Examination revealed a solid, round tumor filling the pelvis, a second one occupying the right iliac region, reaching to the umbilicus, and between these is a softer tumor giving the sense of fluid to the finger. Upon operation it was found that this central fluctuating tumor was the uterus containing the liquor amnii and a three-months fetus. The mass in the pelvis was this fibroid, springing from the left border of the uterus, which had sunken deeply into the cul-de-sac; and the mass lying in the right iliac region was this fibroid springing from the right border of the uterus. Stretched out, the whole mass is about fourteen inches long, by six inches, by four inches.

Dr. Parks Ritchie gave a case report on: (1) Puerperal nephritis; (2) dead infant at 6½ months; (2) induction of labor; (4) placenta previa; (5) irreducible contraction of Braun's ring; (6) high forceps; and (7) craniotomy in an x-para.

Dr. John T. Rogers presented a case-report of "Gunshot Injury of the Brain."

Dr. William Lerche, of St. Paul, read, by invitation, a paper entitled "The Diagnosis of Cardiospasm, With Demonstration of Apparatus and Instruments." The paper was discussed by Dr. Plummer of Rochester, a guest of the Academy, and by Drs. Taylor, Lundholm, and White. A

vote of thanks was accorded Dr. Lerche by the Academy for his unique paper.

A. W. DUNNING, M. D., Secretary.

WINONA COUNTY SOCIETY

A meeting of the Society was held on February 11th at Winona, with 8 members present. Dr. F. H. Rollins, of St. Charles, read a paper on "The Sanitary Aspect of Measles." The paper was quite fully discussed, and a rigid quarantine was advocated as a means of controlling measles.

J. B. MCGAUGHEY, M. D., Secretary.

ST. LOUIS COUNTY SOCIETY

A meeting of the Society was held at Duluth on February 13th, with 29 members present. Papers were read as follows: "Abscess of Brain, with Report of Cases," by Dr. W. H. Magie; "Behavior of Uterine Fibroid," by Dr. T. L. Chapman. Both papers were discussed by nearly every member present.

N. L. LINNEMAN, M. D., Secretary.

WASECA COUNTY SOCIETY

The annual meeting of the Society was held at Waseca, February 3d, with 6 members present. Dr. Chamberlin gave an interesting review of his post-graduate work in Philadelphia and New York, after which the officers for 1908 were elected as follows: President, Dr. F. W. Green, Waterville; vice-president, Dr. M. J. Taylor, Janesville; secretary-treasurer, Dr. H. G. Blanchard, Waseca; censor, Dr. A. G. Alley, Kilkenny; delegate, Dr. H. G. Blanchard; alternate, Dr. J. F. Lynn, Waseca.

H. G. BLANCHARD, M. D., Secretary.

SCOTT-CARVER COUNTY SOCIETY

The annual meeting of the Society was held at Jordan on December 5th, with 5 members present. No papers were read. The delegate made a report of the annual meeting held at Duluth.

Officers were elected for 1908 as follows: President, H. A. Schneider, Jordan; vice-president, O. R. Pozodena; New Prague; secretary-treasurer, H. W. Reiter, Shakopee; delegate, E. E. Novac, New Prague; alternate, O. R. Pozodena, New Prague; censor for three years, E. E. Novac, New Prague.

H. W. REITER, M. D., Secretary.

WASHINGTON COUNTY SOCIETY

The Society held its annual meeting at Stillwater on January 14th, and was given over to the election of offices as follows: President,

Dr. F. A. Stevens, Lake Elmo; first vice-president, Dr. J. H. Haines, Stillwater; second vice-president, Dr. A. H. Steen, Cottage Grove; secretary and treasurer, Dr. F. G. Landeen, Stillwater; censor, Dr. O. F. Thomas, Lakeland.

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F. G. LANDEEN, M. D., Secretary.

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H. M. WORKMAN, M. D., Secretary.

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appendix. This was removed, being strictured, dilated, and containing a concretion. Accidently the diverticulum came into view and was removed. As you see, the stalk is about two inches in length and about three-eighths of an inch in diameter. The distal end is dilated into an irregular pouch about one inch long and half an inch broad, set transversely on the stalk. Its wall is very thin and transparent, and I think must have been many times in danger of rupture. I have no doubt that the attacks of pain from which she suffered were due to distension of this oblong sac.

Case 2. Pregnant Fibroid Uterus.—This exemplifies, quite graphically, the influence of pregnancy upon the growth of uterine fibroids. This specimen was taken from a woman 34 years of age, married, and the mother of two children, 11 and 12 years old, respectively. One year ago, examination by a physician revealed a very small tumor in the pelvis, so small that she was advised it would never trouble her. Three months before I examined her she became pregnant, and very quickly (within three weeks) a very noticeable swelling appeared. Much pain, of a crampy character, developed, getting constantly more and more severe. Examination revealed a solid, round tumor filling the pelvis, a second one occupying the right iliac region, reaching to the umbilicus, and between these is a softer tumor giving the sense of fluid to the finger. Upon operation it was found that this central fluctuating tumor was the uterus containing the liquor amnii and a three-months fetus. The mass in the pelvis was this fibroid, springing from the left border of the uterus, which had sunken deeply into the cul-de-sac; and the mass lying in the right iliac region was this fibroid springing from the right border of the uterus. Stretched out, the whole mass is about fourteen inches long, by six inches, by four inches.

Dr. Parks Ritchie gave a case report on: (1) Puerperal nephritis; (2) dead infant at 6½ months; (3) induction of labor; (4) placenta previa; (5) irreducible contraction of Braun's ring; (6) high forceps; and (7) craniotomy in an x-para.

Dr. John T. Rogers presented a case-report of "Gunshot Injury of the Brain."

Dr. William Lerche, of St. Paul, read, by invitation, a paper entitled "The Diagnosis of Cardiospasm, With Demonstration of Apparatus and Instruments." The paper was discussed by Dr. Plummer of Rochester, a guest of the Academy, and by Drs. Taylor, Lundholm, and White. A

vote of thanks was accorded Dr. Lerche by the Academy for his unique paper.

A. W. DUNNING, M. D., Secretary.

WINONA COUNTY SOCIETY

A meeting of the Society was held on February 11th at Winona, with 8 members present. Dr. F. H. Rollins, of St. Charles, read a paper on "The Sanitary Aspect of Measles." The paper was quite fully discussed, and a rigid quarantine was advocated as a means of controlling measles.

J. B. MCGAUGHEY, M. D., Secretary.

ST. LOUIS COUNTY SOCIETY

A meeting of the Society was held at Duluth on February 13th, with 29 members present. Papers were read as follows: "Abscess of Brain, with Report of Cases," by Dr. W. H. Magie; "Behavior of Uterine Fibroid," by Dr. T. L. Chapman. Both papers were discussed by nearly every member present.

N. L. LINNEMAN, M. D., Secretary.

WASECA COUNTY SOCIETY

The annual meeting of the Society was held at Waseca, February 3d, with 6 members present. Dr. Chamberlin gave an interesting review of his post-graduate work in Philadelphia and New York, after which the officers for 1908 were elected as follows: President, Dr. F. W. Green, Waterville; vice-president, Dr. M. J. Taylor, Janesville; secretary-treasurer, Dr. H. G. Blanchard, Waseca; censor, Dr. A. G. Alley, Kilkenny; delegate, Dr. H. G. Blanchard; alternate, Dr. J. F. Lynn, Waseca.

H. G. BLANCHARD, M. D., Secretary.

SCOTT-CARVER COUNTY SOCIETY

The annual meeting of the Society was held at Jordan on December 5th, with 5 members present. No papers were read. The delegate made a report of the annual meeting held at Duluth.

Officers were elected for 1908 as follows: President, H. A. Schneider, Jordan; vice-president, O. R. Pozodena; New Prague; secretary-treasurer, H. W. Reiter, Shakopee; delegate, E. E. Novac, New Prague; alternate, O. R. Pozodena, New Prague; censor for three years, E. E. Novac, New Prague.

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Dr. Ignatius Donnelly, who recently returned to Minnesota from Butte, Montana, and is now located at Mankato, has been seriously ill. He is now much improved.

Dr. Emil F. Geist, of Minneapolis, sails this week for Europe to attend the German Orthopedic Congress. He will return on May 1st.

Dr. D. F. Wood, of Hanska, has sold his practice to Dr. S. P. Seaberg, and will go to Europe for special study in eye, ear, nose, and throat work. He will probably locate in St. Paul upon his return.

The Fort Pierre (S. D.) Hospital was opened last month. It is in charge of Mrs. N. A. Douglass, with Miss Minnie D. Rhodes as superintendent of nurses. It is open to all physicians and there is no medical staff.

The Crow River Valley Society met in Minneapolis last month. Papers were read by Dr. Christian Johnson, of Willmar; Dr. J. C. Litzenberg, of Minneapolis; Dean Wesbrook, of the State University; and by Dr. F. J. Savage, of St. Paul. Dr. F. C. Todd exhibited glass eyes and some new instruments.

At the annual meeting of the Southern District Medical Society of North Dakota, held at Oakes, N. D., the following were elected officers for 1908: President, Dr. J. F. Brenckle, Kulm; vice-president, Dr. A. E. Hillis, LaMoure; secretary-treasurer, Dr. L. B. Greene, Menango. The next meeting will be held on the last Tuesday in April at LaMoure.

Nicollet avenue, in Minneapolis, has become the office-home of nearly all the physicians in the city by the erection of a thoroughly modern, fire-proof building designed for professional men, the new Donaldson block, at the corner of Nicollet and Seventh. The Hennepin County Medical Society has a commodious assembly-hall and library on the eleventh floor, and on the second floor there is a pharmacy exclusively for physicians, and it is one that will make a physician's heart glad. It is a drug-store, pure and simple; no soda-fountain, no hair-brushes, no frills—just drugs, and it is well-nigh perfection in its fixtures and furnishings, with enamel and glass wherever convenience and sanitary conditions require them. It is in immediate charge of Edward A. Morey, who had charge of the prescription work of Circler's drug-store for twelve or fifteen years. He has the daily assistance of A. J. Guernsey, the manager of the two Donaldson pharmacies.

A large number of physicians are now located

in the new block, and others will soon move to it. The following is the list of physicians already moved in (the room number is the entrance to the suite, which, in some cases, is occupied by several physicians and dentists): Dr. H. C. Aldrich, 401; Dr. C. P. Aling, 602; Dr. J. F. Avery, 905; Dr. G. F. Beachler, 612; Dr. R. O. Beard, 802; Dr. A. E. Benjamin, 1020; Dr. A. N. Besessen, 301; Dr. C. H. Bradley, 415; Dr. Wm. M. Chowling, 701; Dr. J. G. Cross, 910; Dr. Geo. B. Hamlin, 401; Dr. C. D. Harrington, 501; Dr. A. E. Hedback, 1006; Dr. H. H. Helk, 706; Dr. Eleanor J. Hill, 802; Dr. C. H. Hunter, 602; Dr. Jane Kennedy, 906; Dr. F. A. Knights, 815; Dr. H. H. Leavitt, 902; Dr. J. C. Litzenberg, 910; Dr. T. E. McDermott, 604; Dr. A. T. Mann, 910; Dr. Samuel Musgrave, Jr., 304; Dr. Horace Newhart, 910; Dr. R. M. Peters, 1007; Dr. T. F. Quimby, 311; Dr. O. K. Richardson, 304; Dr. Gustav Schwyzer, 411; Dr. J. C. Sessions, 311; Dr. E. S. Strout, 910; Dr. J. H. Stuart, 1015; Dr. A. C. Tingdale, 303; Dr. Mabel Ulrich, 705; Dr. S. Marx White, 110; Dr. M. R. Wilcox, 802; Dr. Van H. Wilcox, 802.

FOR SALE

An operating-chair and compressed-air tank. They may be seen at J. Menver's, 8 Fourth St. S. E., Minneapolis.

PRACTICE FOR SALE

Splendid opportunity to acquire a \$6,000 Minneapolis City practice. Office furnishings, medical appliances, and apparatus cost \$3,500. I am leaving the city to engage in other business on the Pacific Coast, and will sell the furnishings, appliances and apparatus for 25 per cent less than cost, and throw in the good will and practice if transferred soon. Address S. M., care of this office.

TO THE PROFESSION—X-RAY LABORATORY

I have a well equipped x-ray laboratory, rooms 214-218 American National Bank Building, corner Fifth and Cedar streets, and am prepared to do your radiographic or Roentgen-ray therapeutic work.—W. S. FULLERTON, M. D., St. Paul, Minn.

PHYSICIANS' ATTENTION.—Drug-stores on easy payments, etc. Drug-store positions, United States or Canada. F. V. Kniest, Omaha, Nebr.

DOCTOR: If you want practical post-graduate work during fine season in the delightful city, write for particulars. New Orleans Polyclinic. P. O. Box, 797, Post-Graduate Department, Tulane Medical College.

THE JOURNAL OF THE MINNESOTA STATE MEDICAL ASSOCIATION AND THE NORTHWESTERN LANCET

VOL. XXVIII

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No. 6

SYMPOSIUM ON DISEASES OF THE LUNGS AND PLEURA*

THE ETIOLOGY, SYMPTOMS, AND PATHOLOGY OF ACUTE INFECTIOUS DISEASES OF THE LUNGS AND PLEURA

BY WM. R. BAGLEY, M. D.

DULUTH

This is a very large subject, one which occupies several hundred pages in a good "Practice of Medicine," and I have no mind to inflict *seriatim* the details of these various troubles upon you. There are those in this assembly who are authority on these subjects, and I shall leave to the discussion the threshing of the wheat from the chaff as they see it.

After a man has practiced a number of years, there comes to him almost intuitively a correlation of ideas substantiated by his experience which makes it pardonable for him to advance a few theories about things yet unproven. It is surprising, in the busy life the physician leads, how he forgets and neglects the practice of diagnostic methods, which, though open to all, yet make the true difference in the ability of members of our profession. It might not be out of place to recommend the re-reading of a good text-book on diagnosis just to note the points forgotten and to renew interest in cases one has been attending so long in a perfunctory sort of way. Most helpful is the coming in contact with the members of our profession and observing their methods.

In giving the etiology of these affections we speak of exposure, infections of various kinds, including influenza, whooping cough, the eruptive diseases, typhoid fever, and the progressive catarrhal conditions influenced by adenoid and

tonsils. I wish briefly to consider the influence of congestion, mucous secretion and microorganisms, which are the actual etiological processes.

Acute pulmonary congestion as a *primary* exciting factor in the causation of lung affections is responsible in a considerable per cent of cases. It is caused by violent exertion, inhalation of irritants, chilling from exposure to drafts, and alcoholic excesses. The first effect is a swollen condition due to the distended lymph spaces, as well as capillaries, and the second result is increased activity of the mucous glands due to increased blood-supply. This soggy condition predisposes to a loss of cell-integrity, a dissolution of intercellular union, and an escape of serum. A mixture of serum and mucus at the body temperature is a good culture-medium. Excessive mucous secretion in the bronchial tract is a marked factor in the extension of bronchitis and in the causation of bronchopneumonia. The mucus acts as a vehicle for carrying the infection downward, especially during forced inspiration in coughing. Many bronchi are completely plugged by mucus and their distal portions given over to bacterial invasion if their virulence makes them progressive. Bronchopneumonia is more prevalent among children and old people. The reason probably is that in young people we have greater glandular activity, with consequent outpour of mucus in small-caliber bronchi, which makes them more easily plugged. A given area of bronchial surface in the young has more mucous glands than in the adult. Its infection and consequent congestion probably occlude many bronchi from mere swelling of the tissues. In old people the lessened sensibility of the bronchial tract allows of greater accumulation of mucus with its plugging effects, predisposing to exten-

*Read before the Minnesota State Medical Association, August 13 and 14, 1907.

sion of infection. In many old people the tendency toward lung congestion from heart weakness, manifest at this time, would have equal weight with lessened sensibility as an influence favoring the extension of a simple bronchitis. Excessive mucous secretion and congestion go hand in hand in this process, and there is probably no place where their influence is more baneful. Aside from the infection the problem is a mechanical one, that of drainage. It is not unlike the condition in a stream with its outflow impeded during the freshet. Congestions of this character would all subside in a few hours were it not for the presence of microorganisms. The mucous membrane of the larger bronchi at least is probably rarely, if ever, free from bacteria. The conditions just described make it possible for germs relatively inert to grow and by their irritant products intensify and prolong the simple congestion to a pronounced infected one. Treatment is not a part of my subject, but I cannot refrain from making this point at this time as its practice substantiates the conclusions just drawn; in acute bronchitis, relieve congestion and retard excessive bronchial secretion until congestion has been allayed and the cells have established their integrity. In many cases of chronic bronchitis this same procedure holds good.

Microorganisms are a primary etiological cause in the greatest percentage of cases of respiratory trouble. The persistency with which certain infections, independent of the bacillus of influenza and the *pneumococcus*, but characterized by the presence of bacilli and streptococci, go the rounds of a family, indicates strongly their contagiousness. The mode of progress is most often by continuity of tissue, but the blood-stream must be the vehicle in most cases of lobar pneumonia and primary pleurisy. The virulence of microorganisms depends upon the irritant power of their aggressins to subdue tissue or create a suitable soil. The loss of virulency of these organisms is governed by the length of time necessary to develop immune bodies. This must be true in lobar pneumonia, but in most cases of bronchitis and bronchopneumonia it seems more logical that their subsidence is governed by the re-establishment of cell-integrity. This conclusion is strengthened by the fact that if an individual is chilled from exposure during recovery from bronchitis or bronchopneumonia this protection is lost, and pronounced aggravation of the trouble follows. In lobar pneumonia we rarely have a relapse, the consequent trouble, if any, being due to secondary infection. I realize

that this conclusion in regard to cell-integrity is debatable ground, but certain it is that the defense in bronchitis is local and protection easily lost. Recovery in bronchitis is produced by relief of congestion due to improved circulation and consequent clearing away of the results of cell-activity. The unhampered cells gradually return to normal, and the infection symptoms are lost. Secondary infection is a prominent factor in many of these cases. The initial invader is often weakly virulent, but has blazed a trail which is followed and extended with dire results by another. Most bronchopneumonias are mixed infections with some *one* germ leading and the others accomplices in the crime. Investigators have examined the bacterial flora of bronchitis and noted the equal presence of staphylococci, streptococci, and pneumococci, yet in other lung infections, except in bronchopneumonia where it is an inhalation infection, the staphylococci are seldom found. The physical character of its growth must be a determining factor in this point. Seventy per cent of lobar pneumonias that are not preceded by bronchial symptoms, run their course, as far as pathological germs are concerned, with practically pure cultures of the pneumococcus. The secondary infection is most often the streptococcus. In children especially we have many cases of bronchopneumonia that are due to the pneumococcus, and which terminate by crisis in from seven to nine days or by lysis from the influence of secondary infection. Bronchitis and bronchopneumonia I would class as inhalation infections, and lobar pneumonia, not preceded by bronchitis, gets its infection through the medium of the blood-stream. The microscope has demonstrated the pneumococcus in the blood in over 90 per cent of lobar pneumonias, and this, too, in many cases before there were any local lung symptoms.

Primary pleuritis of the acute infectious type forms a small percentage of pleurisies and undoubtedly gets its infection through the blood-stream, the pneumococcus being the most common infection. Rheumatic pleuritic effusions independent of rheumatic symptoms elsewhere are not uncommon and have frequently been considered tubercular processes. Pleuritis is *generally* secondary and most commonly comes by direct extension from adjacent tissue and most frequently from disease processes in the lung itself. Typhoid fever, influenza, and eruptive diseases are etiological factors and in the new-born inflammation of the cord. Most lobar pneumonias give rise to an inflammatory fibrinous exudate

upon the surface of the pleura, which ordinarily does not become infected and later is organized and absorbed. In from one to two per cent, some say higher, by direct extension or through the medium of the blood, pneumococci and streptococci gain access to this rich culture material, and we have an empyema. My present belief is that the degree of pleuritic space-involvement in empyema is governed by the earliness, relative to the pneumonia, with which the germs get into the pleural cavity. For instance, we have a *local* process in case adhesions corresponding to the pneumonic area have formed before infection penetrates, and a *general* infection in case the germ infects the pleura simultaneously with the lung. Clinically, it is noticeable in some of these last cases that the pleuritic pain is of short duration from early separation of the pleural surfaces by exudates and the symptoms of lung involvement less evident, for instance, less sputum than the ordinary case, indicating rather a surface lung affection. In the circumscribed pleuritis the pain is usually more intense and persists longer. Some of these cases localize later, especially the pneumococcic type, which soon loses its virulency. The streptococcic type, on the other hand, will often work from a local to a general or multiple process condition. The pneumococcus is found most frequently in the empyemas of children, and the streptococcus more frequently in adults. A mixture of these two infections is not infrequent, and about eight per cent are tubercular. The location corresponds to pneumonias, the right side being affected as compared with the left in the proportion of five to four.

The *pathological* aspect of these acute lung processes has the following interesting facts. Usually in acute bronchitis the epithelial cells are restored and mucous glands return to normal with little structural change remaining. Repeated acute attacks invariably produce structural changes, which predispose to chronic bronchitis and consequent bronchiectasis. This indicates strongly the removal of the exciting cause, which is frequently chronic adenoiditis and tonsillitis in children, and the establishing of a circulatory equilibrium which prevents the tendency to congestion. This result may be obtained by the use of the cold sponge to the neck and chest. Multiple abscesses of streptococcic and staphylococcic origin are not uncommon in bronchopneumonia. Empyema complicating is less frequent because of less frequent pleural involvement. Single abscesses are more common in lobar pneumonia and not infrequently are due to

the penetration of an unrecognized empyema. The sinus which sometimes results gives an expectoration, which is wrongly credited to chronic bronchitis or thought to be tubercular, whereas poor drainage alone prevents recovery.

Cough is the important persistent symptom of bronchitis. With extension of the bronchitis is a progressive increase of respiration and pulse. Temperature in weak children and old people is not to be relied upon. In children persistent respirations of 40-80 and pulse of 120-180, depending upon age, indicate respiratory affection. Small vesicular crepitant râles indicate the departure of a bronchitis into the pneumonia stage. Physical signs are usually detected, first, over the base on either side of the spine and in the axilla. In children bronchial breathing is more marked normally in the right side, and this must be considered in drawing deductions. Dullness on percussion may or may not be present, depending upon the consolidations, size and the intervening air layer. Lobar pneumonia must be suspected in every case of sudden chill and high fever with an absence of local symptoms elsewhere. Even the presence of local symptoms elsewhere calls for discrimination. I was myself guilty of sending a patient to the hospital for operation for appendicitis. He had been sick twelve hours when first seen. Eight hours intervened between the time I saw him and the time set for operation. There was marked abdominal rigidity, with greater tenderness over the appendiceal region. When seen at time for operation the pain seemed more uniform, and I decided to wait till morning. The tenderness and rigidity gradually subsided. I did not operate. Four days later he developed a cough and rusty sputum. At no time was there pleuritic pain, dullness, or hurried respiration.

In children, frequent vomiting or convulsions may take the place of the initial chill, and in the aged all symptoms may be latent in the beginning. The facial expression, herpes, rapid abdominal breathing with deficient expansion on the affected side, with a disposition to lie on the affected side, tactile and vocal fremitus, dullness over consolidation, bronchial breathing, râles, expiratory grunt, bronchophony, restrained painful cough, rusty sputum, etc., are all familiar. Rusty sputum in children is rarely seen under six years. Ashton and Landis giving Philadelphia's General Hospital records of 991 cases, note an absence of cough in 254 and of sputum in 123. These cases were nearly all alcoholics or very old people. Cerebral or gastro-intestinal

symptoms may predominate in children throughout, though I believe this can be largely eliminated by proper diet, laxatives and intestinal antiseptics. A high leucocytosis does not measure the virulence of the infection, but the effort made in fighting the disease. Diminished alkalinity of the blood is a noticed condition which has given the pneumococcus the credit of producing an acid during the process of growth. Laboratory and clinical evidence seem to agree in this statement. The study of the pulmonic second sound gives a better idea of the right heart's ability to withstand the strain than the pulse. Accentuation of the sound indicates a strong right ventricle; a gradual diminution in the sound indicates right ventricle dilatation and loss of heart-integrity.

Pleuritic effusions do not present so much trouble in discovery if they are looked for. It is more that they are unsuspected and a careful examination not made that they are overlooked. I would remind you that all clothing should be removed from the thorax when making careful examinations of the chest. A helpful procedure with me in looking over the chest is to compare carefully the two sides. The onset of pleural effusions is often insidious, and a serious accumulation of considerable size may exist with unsuspected symptoms until its infection calls attention to the abnormal condition. The increase in fluid content is often very rapid, especially in some of the acute infected types, and I am satisfied that some of my early cases practically bled to death from serum loss because of too early operation, the drainage removing positive pressure and permitting the large infected surface to ooze freely. The indication here is to relieve urgent symptoms until cell-integrity can be at least partially established. The character of the chest fluid can be established only by use of the aspirating-needle. One-third of the effusions in children are purulent or seropurulent. The symptoms most constant and most reliable, aside from aspiration, are lack of chest-movement on the affected side, absence of respiratory murmur, and a flat percussion note. Naturally there are exceptions to this, and an abscess in the dome of the liver, a purulent pericarditis, and lung abscess may simulate empyemas so closely as to be operated upon for it. In every case of pneumonia that does not terminate as it should at the proper time, look for fluid in the chest-cavity.

(FOR DISCUSSION SEE PAGE 117.)

GENERAL THERAPEUTICS OF INFECTIOUS DISEASES OF THE LUNGS AND PLEURA

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ST. PAUL

Apparently there is no disease commonly met with in which the therapeutics is in such a chaotic state as is the treatment of pneumonia. Our books on practice and many of our professors and teachers follow this stereotyped formula: "pneumonia is a self-limited disease"; "there is no specific treatment for pneumonia." This, to be sure, may be followed by some remarks on meeting symptoms as they arise, etc.

The student goes forth to practice imbued with these ideas, and shortly the commercial traveler and the manufacturer's agent come to his office with a satchel full of samples, his mail is daily burdened with circulars and samples, and he soon comes to the conclusion that pneumonia is a terribly dangerous and fatal disease and that the only salvation to his patient is to give the proprietary that is recommended by the peddler or the publisher of the circular, or he is enamored with the high-art display in a picture of the nurse smearing mud over the back or the front of a lovely patient and so thinks he has learned what is a sure-cure for pneumonia. Each of the new remedies that are exploited by the manufacturer for purely commercial purposes, or by the rising doctor with an inventive mind who seeks glory and undying fame, proves little better than the last. The fact is, as is well proven by the numerous articles that are read and the numerous drugs that are added to our armamentarium, that a mild case of pneumonia will get well if it has half a chance, while a severe case of pneumonia needs all the skill that the physician can bring to bear upon it. Speaking of the self-limitation of pneumonia, no more apt comparison has been made than that of a writer a good many years ago who compared pneumonia to a storm, and said that while pneumonia may be a self-limited disease, yet the physician who sat down to treat it on that basis and waited for the natural limitation to come, would be as derelict in his duty as the ship captain who, in a storm, would console himself by the fact that all storms come to an end sooner or later, and that he might as well go to his cabin and go to sleep and wait until the end of the storm. Shipwreck would as certainly follow this method if the storm was severe as death

would follow pneumonia, if the pneumonia was severe.

A glance over the recent papers on medication in pneumonia does not give us great faith in the new methods of treatment. Of late a great deal of attention has been paid to serum treatment of pneumonia, as well as of other diseases. The marked benefit derived from the serum treatment with diphtheria has given a great impetus to investigation along the lines of other diseases, but without as favorable results. Just as in septicemia we often fail to get results from serum treatment because a serum derived from one variety of germs will not have a sufficiently curative effect on disease derived from other forms of cocci, so with pneumonia, we often have mixed infections and while a pneumococcus may be present in pneumonia, still there are often other infective germs present as well, on which the pneumococcic serum has no influence. One writer reports his experience with twenty-five cases of pneumonia, treated with the Pane serum, two deaths occurring, which gives a mortality of eight per cent. Winkelman using the Romer serum gives a report of sixteen cases with five deaths, which gives a percentage of mortality of over thirty. In twenty-five per cent of his cases resolution followed in twelve to twenty-four hours after the injection, but as these injections were on the sixth, seventh, and eighth days of the disease, the result is not particularly surprising, and reminds me of an instance which occurred some years ago, when a friend, praising his family physician as being one of the most wonderful men in the profession, said: "Two days after our baby was born my wife had no milk, and the doctor said: 'This will not do at all, we will not bring this baby up on the bottle,' and he wrote a prescription, and she began taking it, and in two days she had an abundant supply of milk."

With this, as with other lines of treatment, *post hoc*s are abundant, but they are not necessarily *propter hoc*s. As far as local applications are concerned, nothing in the experience of the writer has been as good as ice. Ice-bags applied to the side, if they do not control the pulmonary inflammation and congestion, certainly do relieve the pain and lower the temperature to some extent. They are clean and agreeable to the patient and in every way to be preferred to the nasty damp application of poultices, antiphlogistine, and applications of that sort.

Preble recently has made a mathematical calculation in regard to a case of pneumonia that he saw that was being treated by means of a poultice

weighing three pounds, and lying on top of the chest. With respirations of forty-five per minute this necessitated that the patient lift with the chest 135 pounds per minute or something over four tons per hour. It requires no very profound reasoning to help us to decide whether what the patient derived from the warmth and the moisture would compensate for the labor required by this application. The objection, so far as the weight is concerned, would be the same with the ice if applied to the top of the chest. The ice-bag should be placed along the axillary region where you get the cooling effect of the ice without the effect upon the chest.

No person suffering from any disease should be obliged to suffer if that suffering can be avoided, and so if the application of the ice does not relieve the pain that is present always, with a pleurisy and generally with a pneumonia on account of the pleurisy that accompanies it, morphia or some similar drug should be used, preferably by means of the hypodermic. Often in the beginning a full dose of morphia will relieve the pain, and then the pain can be kept lowered by means of the ice-bag.

While strychnia is an excellent tonic for most people, both to the nervous system and the circulation, there are many people on whom it does not have in any way an agreeable or beneficial effect. I have seen patients on whom the effect was decidedly depressing. As is the case with all drugs whose principal effect is upon the nervous system, there is a great difference in individual effects. As we find that people who take morphia or cocaine are sometimes exhilarated and sometimes depressed, so we find the same variety of effects in the administration of strychnia. Some years ago a patient complained to me of feelings of faintness and vertigo occurring at intervals during the day. They occurred with great regularity, as he said, coming on about meal-time. I looked for disturbance of his digestion, but found none. After puzzling over his case for a little while I found that he was taking a pill containing a thirtieth of a grain of strychnia before each meal, and as soon as the administration of the strychnia was stopped the disagreeable symptoms of faintness and vertigo disappeared, and he was perfectly well. Since then I have seen a number of cases where similar results followed the administration of strychnia, and I have learned to be less general in its administration and watch more carefully its effects, and while in a great many cases of pneumonia as other diseases its use is of decided assistance,

yet it should not be used as universally as a matter of course as we often see that it is.

The use of digitalis in the treatment of pneumonia, and even its specific action in this disease, has often been recommended. The dosage at each succeeding period of recommendation becomes greater and greater until of recent years we have seen enormous quantities advised, and any failure of cure is attributed to failure of giving large enough doses rather than a failure of the specific action of digitalis. We find recommendation of from half a pint to a pint of the infusion of digitalis to be given in the twenty-four hours, and while it is perfectly safe for a hospital case where the patient can be carefully watched by skilled nurses and internes to take such doses as this, knowing that the administration can be stopped at any time when untoward effects are shown upon the circulation, yet for a patient in private practice, and especially a patient in the country who cannot be seen at short intervals, it seems to me that the administration of these heroic doses is fraught with great danger. In addition to this, we find that a very large portion of people have stomachs that are decidedly intolerant of digitalis, and full doses frequently cause nausea and vomiting, and in such cases do more hurt than good. The use of ordinary, moderate doses of digitalis is often of great benefit in the treatment of pneumonia or in disease where, as in this, the main danger comes from a weakening of the heart's action and the consequent blocking of the circulation. Do not wait until the pulse has become weak and rapid and the pulmonary sounds have changed in their character, but at the first evidence of any weakening of the circulation, digitalis should be administered and from then on should be given regularly and should be carefully watched.

Nitroglycerine is very valuable in these cases, either alone or in addition to digitalis. Particularly in old people I have found nitroglycerine useful, and I believe that many lives of old people who have pneumonia are saved by the free use of this remedy. It should be given freely and frequently so that the systemic blood-vessels can be fully dilated, and in this way the amount of blood in the pulmonary circulation is diminished and so the congestion is relieved.

Personally I have great faith and confidence in the administration of atropia in various forms of pulmonary diseases, both in bronchitis and in catarrhal, as well as croupous pneumonia. Its stimulating effect upon the respiratory system is beneficial, and with experience with its use I have

gained more and more confidence in it until now it is one of my main reliances in the treatment of acute pulmonary conditions.

A word as to the cough mixtures and so-called expectorants. While in the treatment of bronchitis an expectorant containing a mixture of sedatives or narcotics with depressants or emetics may be of great benefit in loosening the cough, increasing the amount of material to be expectorated, and making it more liquid and more easily gotten rid of, yet in pneumonia, where we must depend to a great extent on the strength of the circulation and on the condition of the stomach, digestion, and assimilation, the administration of any nauseant is positively injurious, and the more they are used the worse for the patient. I have frequently seen patients whose dangerous condition seemed to be due rather to medication, than to the disease. If the cough is persistent, ineffective, and irritable, medicine, such as heroin or codeine or some other of the opium preparations, should be given in sufficient amount to stop the irritability. Aside from this, nothing is needed in the way of treatment for cough. And while we are on the subject of cough, I want to add just a word on the frequency with which the various forms of ammonia are added to nearly all the cough mixtures. Sometimes the carbonates and sometimes the chlorides, almost invariably some form of ammonia, are added until it is no wonder that the laity have an idea that there is some connection between ammonia and pneumonia because of the similarity of names. They are nasty and disagreeable to the taste, and the benefit derived from them is not sufficient to counterbalance the evil of the bad taste and sometimes the irritation of the stomach.

Quinine has been claimed by many to be an abortive in the treatment of pneumonia if given in large enough doses. We think the consensus of opinion at present is that it has no such effect. In those regions where malaria is prevalent, every one who is laid up with any acute trouble, whether it be a pneumonia, a broken leg, or confinement, is very apt to have some evidence of malarial infection as a complication, and so it has become the custom with physicians to give quinine for every trouble, no matter what, and so they give it in pneumonia as well, but in a country as free from malaria as our Northwest the administration of quinine is absolutely useless unless it be for the effects of a bitter tonic.

It would seem unnecessary at this day to utter any caution as to the administration of the coal-tar antipyretics with their well-known effects of

weakening the heart's action and producing decided cyanosis. There is such a varying degree of susceptibility to these drugs that a dose that would be perfectly safe for one person is poison for another. Phenacetine, for instance, which is claimed to be the coal-tar preparation par excellence on account of its freedom from depressing effects, is unsafe for some people. I have seen three cases of alarming and one of almost fatal result from the use of phenacetine in doses as small as five grains, in people who had very slight ailments to begin with. The manufacturers and dealers are yearly and almost monthly introducing to the profession coal-tar products which they claim to be entirely free from any weakening or debilitating effect upon the heart or respiration, and yet so far time proves that each and all of these, like those previously introduced, are just as dangerous as the old ones; in fact the large majority of the new ones are the old ones under another name. High temperatures are among the least of our dangers and troubles in pneumonia. The disease is of short duration, and if we find that a person with a typhoid can stand a high temperature from four to six weeks, or a patient with tuberculosis for as many months, why should we be alarmed at the temperature in pneumonia with its comparatively short duration. If, however, we are anxious to reduce the temperature let us do it as was recommended earlier in this paper, by use of ice externally rather than by the use of dangerous antipyretics internally.

In severe cases where so much of the lung is involved that oxygenization is decidedly interfered with and the patient is more or less cyanotic, I have often found the administration of oxygen gives temporary relief, and the use of it will often help us materially in tiding over the period at the crisis where with a weakened circulation we have a congested condition of the lungs that interferes materially with the oxygenization of the blood.

As to alcohol, there is of late years a tendency to use less of it in the treatment of all acute diseases. If a patient has been accustomed to the constant use of it as a beverage, it is a bad time to stop when sick, so in these cases I am accustomed to give alcohol about as freely as the patients have been taking it before, but aside from this indication the use of alcohol is very rarely needed, and the majority of patients will do better without its use than with it.

As to the temperature of the room, there is no necessity of either going to one extreme or the

other. A room whose temperature is comfortable and agreeable to the nurse and attendants is good enough for the patient and there is no necessity to place him either in an oven or the cold storage.

In closing, just a word as to the diet: these patients as a rule have very small appetites; with the high temperature and coated tongue there is very little desire for food, and there is often a digestive tract that will not properly assimilate the food that is taken. The writer has found with years of experience that, as a general rule, the patient's appetite is a better guide than any theoretical rule, and if the patient has no desire for food and does not wish it, I do not urge it upon him, but let him have all the water he can be induced to drink. If, however, he is not so ill but that he has appetite for food, let him eat anything in reason that he desires, and I have never had any reason to regret doing it.

(FOR DISCUSSION SEE PAGE 117.)

THE SURGICAL TREATMENT OF ACUTE INFECTIONS OF THE LUNGS AND PLEURA

By W. H. MAGIE, M. D.

DULUTH

The surgical treatment of acute infections of the lungs and pleura consists chiefly in evacuation, either by aspiration or open incision, with or without drainage of fluids or pus that have formed in the pleural cavity or the pulmonary tissues. These accumulations of serum or pus are usually the sequelæ of recent inflammation either of the lung and pleura primarily, or secondary to inflammations of distant organs that have suppurated, the pus finding its way into the pleural cavity, causing pleural or lung involvement.

For the purpose of this paper, which must necessarily be brief, we shall limit our discussion to the treatment by surgery of acute infections of the lungs and pleura as follows:

First. The surgical treatment of acute pleurisy with effusion into the pleural cavity.

Second. The treatment of acute infections due to penetrating wounds of the pleural cavity or lungs.

Third. The surgical treatment of acute empyema.

Fourth. The surgical treatment of acute abscess of the lung.

Fifth. The surgical treatment of acute gangrene of the lung.

The surgical treatment of acute infectious diseases of the pleura presents a very promising field for successful surgery. This is due to the fact that the pleura is readily reached through the chest-wall by operative procedures. This is far from being the case with acute infections of the lungs that demand surgical intervention. Surgical operations upon the so-called pleural cavities give promise of success. Good results are due, as a rule, to the fact that the diagnosis is made with ease, and the location of the diseased processes can be outlined with accuracy. It is very different in acute infectious diseases of the lungs demanding surgical treatment. The intrathoracic organs are not so accessible; therefore diseased processes are not so easily localized. Particularly is this so in deep-seated and multiple accumulations of pus in the lung tissues. The principal diseases of an acute infectious nature demanding surgical treatment are affections of the pleura, accompanied with an effusion into the pleural cavity of simple serous sterile fluid which may later become infected with pus-producing germs, terminating in an empyema. The pleura is most often infected from extensions of diseased conditions of the lungs, as occurs in pneumonia. The most common of all diseases requiring surgical treatment are accumulations of serous fluids in the pleural cavity. The indications for surgical treatment in simple effusions in the pleural cavity arise when the accumulations are so large that they interfere with respiration and the heart's action, as characterized by marked cyanosis, dyspnea, and failing circulation. Large accumulations may cause sudden death by heart failure, due to pressure upon the large vessels and heart. Aspiration of the fluids, all or in part, gives immediate relief of urgent symptoms. This operation is very simple and is done by passing either an aspirating-needle or trocar through one of the intercostal spaces. I prefer an Ochsner trocar with a piece of rubber tubing attached to the outlet of the trocar, the other end of the tubing resting in a sterile basin placed on the floor. This gives us the benefit of gravity and prevents the entrance of air into the pleural cavity. In circumscribed pleuritis the entrance of air is harmless as a rule, but it is better to avoid the admission of air into the pleural cavity, as it might possibly carry infection. The aspirator is not so satisfactory in my experience, as it often sucks the opposite pleura into the opening, causing plugging of the canula. Sometimes aspiration will fail to cure, the cavity filling again and again. Free incision and drainage will then be-

come necessary, or even a resort to Schede's operation, removing several ribs or parts of ribs, together with the thickened pleura, allowing the chest-wall to fall in and come in contact with the lung pleura, thereby obliterating the cavity. It is rare, however, that such radical measures as resection of the chest-walls are necessary if too much delay has not occurred before tapping. Do not be discouraged if tapping is repeatedly required, as I have often seen a cure effected after four or fiveappings.

Penetrating wounds of the chest-wall or injuries to the lungs caused by fractured ribs often terminate in conditions that require surgical treatment.

The symptoms denoting surgical treatment are symptoms of pressure or infection. The question arises in this condition as to the advisability of opening the pleural cavity by resection of a rib or by the more simple operation of aspiration. In my experience the opening of the chest-cavity for the purpose of removing accumulations of blood has not proven very satisfactory. The mortality has been large, owing to the fact that these accumulations are not walled off and become readily infected through the operative wounds. In some cases I have depended upon simple aspiration with better results, removing all the liquid portions of the blood, thereby relieving the urgent symptoms caused by the pressure, and depending upon the final absorption of the clot. In case the clots become infected rib resection and drainage will be necessary.

EMPYEMA

Accumulations of pus in the pleural cavity are designated pyothorax or empyema. The pus is usually derived from infections extending from the lung proper to an already existing pleuritic effusion that has remained sterile for at least a time. Or it may be due to a rupture of a subphrenic abscess into the pleural cavity, the subphrenic abscess having its origin in a variety of diseased conditions, such as abscess of the pancreas, perforative gastric ulcer, perforative abscess of the gall-bladder, and abscess of the liver, kidney, or vermiform appendix. Occasionally an acute pleuritis is due to rupture into the pleural cavity of an abscess occurring in the course of Potts' disease of the spine. I have seen this accident occur, and it is usually rapidly fatal. Pleuritis demanding surgical treatment may also be caused by an extension of an inflammation of the pericardium, either septic or otherwise. The surgical treatment of empyema of the pleural cavity consists of evacuation of the pus, either by

aspiration or incision, with or without resection of parts of one or more ribs. Large accumulations of pus into the pleural cavity present a very serious condition, and unless treated with the greatest care a very high mortality will ensue, even with prompt operation and evacuation of the pus through a large opening with free after-drainage. This I have observed in my operative experience with empyema, even when early operation has been performed. Having observed that large acute empyemas involving the greater part of the so-called pleural space, crowding the lung upward and forward without any apparent walling off by adhesions, have a very high mortality following immediate radical operation, I have hesitated making resection of a rib at once with drainage. Instead, I have adopted the plan of tapping first with a trocar, thereby relieving the urgent symptoms caused by the pressure; then placing the patient in bed with shoulders raised, the so-called Taylor position, causing the remaining pus and fluid to gravitate into the lower part of the chest, hoping that it may become walled off in the lower part of the thorax, as pus in the abdominal cavity is walled off after rupture of a pus-tube or an appendix. In three cases treated in this way, I have succeeded in walling off the pus, converting a general diffused septic pleurisy into a smaller circumscribed empyema, which was operated upon successfully by resection of a rib and free drainage a few days later. I believe this is a valuable procedure, and if practiced will save more patients than immediate radical resection of the rib. I recall several cases of septic pleurisy operated upon by myself in my early experience by aspiration in which the urgent symptoms of dyspnea and failing circulation were relieved, but the cases were not cured until, after several aspirations, I was compelled to resort to excision of the rib. These cases were primarily cases of diffused septic pleuritis that had been converted by aspiration into a circumscribed empyema that was safely treated later by rib-resection and free drainage.

Having therefore made a diagnosis of diffused septic pleuritis, the patient should be prepared for aspiration by thoroughly cleansing the skin, rendering it as sterile as possible by scrubbing, then applying Harrington solution, allowing the solution to remain upon the skin-surface for a period of three minutes. It is then washed off with sterile water. Then selecting a point about the sixth interspace and in the axillary line, I proceed to inject the skin and deeper tissues with a solution of cocaine, one-half per cent cocaine

nine parts, with one part of one to one-thousand solution of adrenalin. This solution can be used in quite large quantities without danger of poisoning, as it is very weak in cocaine and its rapid absorption is prevented by the adrenalin. It, however, produces complete local anesthesia in about five minutes, so that the operation from this time on is painless. For making the paracentesis I use an Ochsner trocar as described above in the operation for tapping a simple pleurisy. After the trocar has been passed into the pleural cavity the stilet is withdrawn until the outlet is left free and the shoulder upon the stilet is brought back firmly as far as it will come, plugging the other outlet of the trocar and preventing the entrance of air into the pleural cavity. After the pleural cavity has been emptied in this manner, the patient is put to bed with the shoulders elevated, this position causing the remaining fluid in the pleural cavity to gravitate into the lower portion where it will later become walled off, when the operation of rib-resection can be more safely performed. The operation for the resection of one or more ribs in simple circumscribed empyema is not a difficult one and can be performed under local or general anesthesia by a skilled operator in one or two minutes. If the patient's condition is not serious, I prefer general anesthesia; on the other hand, if the patient is weakened by prolonged sepsis with large accumulations producing difficulty in breathing, with rapid, weak pulse, it will be safer to perform the operation under local anesthesia. The location of the incision and the ribs attacked will depend upon the location of the accumulated pus. If possible, I prefer making the operation through the thin axillary or anterior chest-wall rather than through the more thick, muscular wall of the posterior chest-region. The opening in the chest-wall should be made to correspond with the lowest point of the empyema, so that drainage will be as perfect as possible. After incising the skin and soft parts, the rib or ribs are exposed and the periosteum incised and dissected off for a distance of two inches; then the rib is divided with a rib-resector, removing about two inches, being careful to avoid wounding the intercostal artery. The next step of the operation is the incision into the pleural cavity through the rib periosteum and pleura. By making the incision parallel to the intercostal vessels and in the center of the wound, there will be no danger of wounding the intercostal vessels. The incision through the pleura should be made long enough to admit easily two fingers so that an

examination of the abscess-cavity can be made, outlining, if possible, its limit.

Sometimes more than one pus cavity will be found to exist, as is made evident by percussing the chest after having emptied the first abscess. If two or more empyemas are present, other openings in the chest-wall may be necessary. I have succeeded in breaking down the adhesions into the second cavity, converting the two cavities into one, when its border was near the chest-wall opening, without making a second opening in the chest-wall. If the abscess cavity is very large it will be well to resect two or three ribs so that plenty of room may be made that a thorough examination and cleaning out of the cavity can be done.

The question of irrigating the abscess-cavity is now to be considered. For many years I practiced irrigation of all empyemas after resection of the ribs, the irrigation being performed with a saturated solution of boric acid. I have never seen collapse or bad results following irrigation which could be attributed to the washing. Of late years I have begun the practice, advocated by some surgeons, of treating these cavities without irrigation, but if the empyema is an old one and contains large masses of pyogenic membrane and lymph hard to remove without irrigation, and when remaining they act as plugs interfering with free drainage, I have resumed the practice of irrigation for the purpose of facilitating the removal of these solid masses. The irrigation is repeated daily until all the plugs of solid pyogenic membrane have been removed, leaving a clean granulating pleural surface that would readily adhere to its fellow upon the opposite side, provided the lung has expanded promptly, obliterating the cavity. Free drainage should be established by passing a couple of large-sized rubber drainage-tubes two or three inches long into the cavity, transfixing them on the outer end with a large sterile safety-pin, to prevent their getting lost in the abscess-cavity. The drainage-tubes can be then held in position by placing gauze-packing around them. Many devices have been invented to prevent the entrance of air into the pleural cavity, thereby facilitating the expansion of the lungs. I have had no experience with such devices and cannot say whether they are of real value or not. In small circumscribed empyemas they are not necessary, as such cases heal quite promptly without. It is only in large acute general infected pleurisies that their use would, in my opinion, be demanded.

ABSCESS OF THE LUNG

The treatment of acute abscess of the lung consists in free incision with resection of ribs, usually two or more, and drainage. The abscess having been located, a couple of ribs are resected in the same manner as for draining an empyema of the pleural cavity. The lung pleura being now exposed, if the abscess is superficial, you will usually find the lung pleura adherent to the costal pleura. When this condition is present, incision can be made directly into the abscess-cavity. In deep-seated abscesses there may be no pleural adhesions to guide the direction of the incision. In the absence of adhesions a small aspirating-syringe can then be brought into use, a needle passed in the direction of the suspected abscess, and if pus is found the abscess is easily located. If adhesions of the two pleural surfaces have taken place, the incision can be made directly into the abscess-cavity without fear, as the abscess under such conditions is usually located very near the surface. If there is any doubt about the nearness of the pus to the pleura, the aspirating-needle will be introduced in the direction of the suspected abscess. In the absence of adhesions of the visceral to the costal pleura, after the abscess has been located it will be well to stitch the visceral to the costal pleura, then pack the wound with iodoform gauze, waiting two or three days until adhesions form between the two layers of the pleura. Then incision can be made direct into the abscess without danger of infecting the general cavity of the pleura. The incision into the abscess-cavity in lung abscess should be large enough to permit a thorough inspection and cleaning out of all solid masses. For the purpose of draining lung abscesses the author has preferred large rubber drainage tubes, together with gauze. Gauze alone does not drain pus: it merely drains the liquid portions of the pus, leaving the solid portions behind. The rubber tubes are fastened in the same manner with safety pins as in empyema, to prevent their passing into the abscess-cavity and becoming lost. They can also be utilized in the after-treatment to irrigate through, directing the irrigating fluids to the bottom of the cavity. The tubes should be kept in place until the cavity has become obliterated by healthy granulations. Abscesses communicating with the bronchial tubes should not be irrigated until the granulating process has closed off the communication with the bronchus, as the fluids would pass directly into the bronchus and trachea, causing strangulation.

ACUTE GANGRENE OF THE LUNG

Acute gangrene of the lung is treated with rib resection and thorough removal of all gangrenous material with drainage as in lung abscess. Irrigation should not be used at once, as the same danger exists as in lung abscess of the fluids passing into the air-passages. After the abscess-cavity has reached the granulating stage the bronchi will soon be closed by the granulations; then irrigation can be done safely. The same kind of drainage-tubes with gauze-packing are used in the treatment of cavities produced by gangrene of the lungs as are used in the treatment of abscess of the lungs. These tubes should remain in position until the abscess-cavity is entirely obliterated by a healthy granulation. If the tubes are removed too soon the external wound heals very rapidly and may cause retention of pus in the granulating cavity, producing fever and making it necessary to re-open the wound and insert drainage again.

DISCUSSION OF THE THREE PRECEDING PAPERS.

DR. A. T. MANN (Minneapolis): I shall limit my remarks to the surgical aspects of the papers and of the subject.

In the first place let us take empyema. It is of prime importance to make the diagnosis early, because most cases where early diagnosis is made and early drainage is employed recover in a comparatively short time, and, as a rule, completely; therefore we should make an early diagnosis.

The place where we are most apt to fail is in children, on account of the obscurity of the pneumonias which cause the empyemas and on account of lack of careful diagnostic methods; therefore we must be especially careful with children. The trocar must be used more often and earlier with children than with adults, because, if the diagnosis is made early, operative drainage gives early and complete results. In making the diagnosis of empyema it needs aspiration to tell whether pus is present; auscultation and percussion tell whether fluid is present: aspiration tells if it is pus; leucocytosis points the way, but does not tell us.

In regard to the place of the aspirator: the aspirator has its place in making the diagnosis, but it has almost no place in treatment. We see in textbooks that some cases of pneumococcal empyema are cured by aspiration; most of them, however, are not cured by aspiration, but practically all of them are cured by drainage, therefore, aspiration should not be the means of treatment. It loses valuable time and leads to more extensive operations later.

We have not had enough experience with the treatment with the opsonic products to know what it will do, but it seems to me when drainage has been indicated in the past it will be indicated in the future, unless results are very different from those obtained in the few cases in which the opsonic treatment has been tried.

Now, to discuss some general questions of chest surgery. In opening the chest-cavity we have two dangers. The first is pneumothorax and the next is sepsis. Pneumothorax is of very little gravity as a rule, and almost never causes fatal results or much disturbance if the pneumothorax is slowly and gently induced. Sepsis is the thing we would most avoid; it is the thing that leads to bad results.

This brings up the question of artificial measures for preventing pneumothorax, and the best is the cabinet. It was my pleasure in 1904 to see Mikulicz operate on his third and fourth cases in this cabinet. Its dimensions are 6x8x8 feet, with double doors, and the whole thing is made of sheet-iron and plate-glass and is air-tight. There are two sets of pumps inside. This cabinet has, in addition, a rubber diaphragm at one end through which the head of the patient is thrust, so that the head is exposed to the ordinary atmospheric pressure. There is room for the operator and two attendants, with an operating-table in the cabinet. The air is pumped out to a negative pressure of about ten millimeters of mercury, and the operator and assistants must simply breathe about once more every fifty times they take breath in order to make up the difference. When the pleural cavity was opened there was no effect on the respiration of the patient that I could see. There was no bad effect at any time during the operation in either case.

But, as I said before, sepsis does more harm than pneumothorax. One of these patients died of sepsis, probably unavoidable, but sepsis is more important than pneumothorax.

Coming back to empyema: it has been shown that the ordinary tight dressing put on is airtight as soon as the inner layers are wet. A little air or pus is forced out on expiration, and the dressing, acting as a valve, holds it out; then the lung expands a little to fill up this space. Such a dressing is all we need in the ordinary early cases to gain rapid healing with practically a complete expansion of the lung. In the old cases, which do not expand in this way, we have in recent years a method devised by Perthes, which is on the plan of the ordinary exhaust- or water-pump. It is on the principle that a tube inserted in a downward direction into another tube through which water is flowing, is under the influence of constant suction. A tube is inserted into the chest for drainage, and this is connected with the water-pump just described, even though the patient may be twenty-five or thirty feet away. The stream of water to be turned on will be found to be surprisingly small, as it requires a negative pressure of only ten millimeters of mercury to keep a normal lung expanded, and two or three times this amount is usually sufficient for the expansion of the lung in cases of empyema. The first tube is passed through an airtight bottle, which collects the pus. Striking results are obtained by this method. Lungs which by the old methods expand slowly will expand more rapidly, and many cases have yielded in which it was necessary previously to perform extensive destructive operations on the chest-wall to bring it into contact with a shrunken lung.

There is one more step in the old operations on old empyemas. Estlander showed us that we could

resect ribs and allow the soft parts to fall into contact with the shrunken lung. Schede showed us that it was the old thickened pleura which caused the delay in healing and made it necessary to repeat the operation from three to eight times, usually, before the final healing. Fowler, in 1893, and De Lorine, early in the next year, showed that these old lungs still have the power to expand if the fibrous covering is removed, but this is an exhausting and bloody operation. It remained for Ransahoff of Cincinnati to publish, last year, what seems to me the key to the situation. From one of his early attempts to do the Fowler operation he noticed that an incision carried through the thickened pleura to the lung, as shown by the bluish tint in the floor of the cut, widens out rapidly. So will a second and a third, and any number that may be made. So the feature of his operation is to make the incisions like a gridiron about a quarter of an inch apart and cross them by others. The lung begins to expand at once to a moderate degree.

It has seemed to me that the surgeon should take one more step forward, and not only remove the parietal pleura and make the multiple incisions in the thickened pleura of the lung, but he should also, early in convalescence, make use of the suction of the water-pump. If we can do this through some form of an incision which allows us to replace the chest-wall where it belongs, we shall then be able to have a full-sized lung in a full-sized chest.

DR. J. W. ANDREWS (Mankato): There is a great tendency to leave serum to be absorbed, is there not? The serum does no special harm, *per se*, but the compression of the lung caused by its presence is as harmful as if it were purulent, and the removal of serum under strictly aseptic precautions is to be recommended.

In regard to purulent effusions in the chest: I ventured to make the statement in this Association a few years ago, when so many physicians were exsecting ribs for that difficulty, that I believed the time would come when we should do less of that kind of work. I believe that as a general practitioner I have had a large experience with purulent effusion in pleurisy, and in few cases have I ever exsected a rib. I believe we can almost always get speedy and perfect results by making a free opening between the ribs at the proper place and draining. In my early practice I washed out the pleural cavity too early and too much. As suggested by Dr. Magie, it is a practice that does harm, but, as a rule, where we drain we see the patient get well. It is rare for the pleural cavities on both sides to be filled with pus. Before we operate it is already shut off.

Now, as to the treatment of pneumonia: very often in our meetings we have heard some drug mentioned as practically a specific in the treatment of pneumonia. I am glad that the day has come, and that I live in this present scientific age in medicine, when physicians are more rational in treating this disease; and in this connection I want to congratulate Dr. Abbott on his treatment of pneumonia. There are no specifics and few drugs used.

In regard to diagnosis of pneumonia: the writer of this paper brought out one fact which ought to be emphasized. You, gentlemen, who have had a large experience know when an early diagnosis is made how

often a mistake is made, every pain in the right side being called appendicitis. Not long ago a physician in a neighboring city brought a young man to the hospital suffering from supposed acute appendicitis, and he telephoned to be ready to operate. When the patient came I examined him and concluded he was coming down with pneumonia, and I advised the physician that I thought it was pneumonia. The next day the patient had developed a marked case of lobar pneumonia, and he had no appendicitis at all. A little later a case was operated on in our hospital that was supposed to be a chronic case of appendicitis. The appendix was removed, and during convalescence a case of pneumonia, so-called, was developed. I am satisfied that was pneumonia from the start, and no appendicitis at all.

DR. H. B. SWEETSER (Minneapolis): I wish to emphasize the fact that at least one-third of the cases of pleurisy with effusion are tubercular, and that complete aspiration of such a pleurisy may, and in fact often has, resulted in a general miliary tuberculosis on a tubercular meningitis. In former years I was never satisfied until I had emptied the chest-cavity as completely as possible, but, following such a disastrous experience as just indicated, I have modified my procedure. I now aspirate only in those cases where absorption is not taking place at all, or where the effusion is so great that it interferes too seriously with the action of the thoracic contents. Even then only so much fluid is removed as will allow the absorptive function to be renewed. In this way the danger of general infection is reduced to a minimum.

As regards empyema: it is to be noted that expansion of the lung does not always necessarily follow early operation. The ability to expand or not depends largely on the thickness and toughness of the pleural exudate. To decorticate is a formidable operation. Ramschhoff has shown that expansion may be obtained much less dangerously by gridironing the visceral pleura by right-angled incisions. This I have done with very happy results, and it seems to me that some such operation ought to be tried first before resorting to such formidable operations as those of Estlander and Schede.

An important point in thoracotomy is not to cut so low as to run the danger of entering the peritoneal cavity. I remember Dr. Abbott of St. Paul mentioned such an experience, and the same thing nearly happened to me.

Irrigation I have found to be worse than useless. Almost invariably it has been followed by the development of high temperature and other symptoms of toxic absorption. When patients are not doing well after operation, the trouble usually is inefficient drainage; if this is remedied, subsidence of the bad symptoms almost invariably takes place, and the patient goes on to recovery.

DR. MAGIE (Essayist): Dr. Mann has stated in his discussion of my paper that aspiration, in his opinion, has no place in the treatment of empyema. I do not think it has in circumscribed empyemas, but in acute general empyemas of the young it often cures. However, if it fails to cure, then the radical operation can be performed more safely. The point that I wish to make is, that in acute septic pleurisy that fill the

whole cavity the operation of rib-resection has a large mortality, and that it is better to first aspirate. This relieves at once the urgent symptoms. Then placing the patient in the Fowler position the remaining fluids will become walled off in the lower portion of the chest and can then be treated later by excision of the rib and free drainage.

In this connection I wish to call attention to the fact that accumulations of pus in the pericardial sac are sometimes mistaken for empyema of the pleural cavity. A case in point is one that came to St. Mary's Hospital in Duluth from a hospital in a small town about fifty miles west of this city. He had been ill for about two or three months. The case was diagnosed by me as one of empyema of the pleural cavity. It was operated on by rib-excision and found to be a case of purulent pericarditis. He recovered from the pericarditis and had gained twenty-five pounds in weight at the end of two months, when he was attacked with an acute general phlebitis and soon died.

My experience with simple pleurisies of an acute nature does not agree with the experience mentioned by Dr. Sweetser. It may be that my cases were tubercular, but I know of so many cases of simple pleurisies operated on years ago which are still living and in good health, that I am led to doubt their tubercular nature.

DR. E. J. ABBOTT (Essayist): Every once in a while I run across a case of pleurisy where the effusion has been present for a long time and the lung compressed and the plastic exudate allowed to organize so that the lung will never again regain its size and function. There is a tendency, on the other side, to aspirate these cases too soon and withdraw the fluid and diminish the intrathoracic pressure at a time when the fluid is being poured out, and the consequence is that we have a rapid re-accumulation of fluid, which withdraws much serum from the blood and does not improve the patient. Once in a while there is so rapid an accumulation of serum that it is necessary to draw

some out to relieve an excessive dyspnea, but in the great majority of cases we do much better to wait until the outpour of serum is stopped and then with aspiration get a better and more favorable effect. Even in these cases, if we put the patients on a dry diet, with a complete absence of liquid, and let them be at rest, the effusion will often absorb, and there will be no necessity for aspiration, so we want to avoid too early aspiration on the one hand, as well as too late on the other.

As to the case Dr. Sweetser referred to where I got down too low in the chest: it was a case that interested me exceedingly, and I have often called the attention of my students to the case as showing the liability of a mistake. It was an empyema of the left side, and a puncture had been made in the fifth interspace and demonstrated the presence of pus, and I excised a portion of the sixth rib immediately beneath. To my surprise I found I had gotten into the peritoneal cavity, instead of the pleural cavity. This was because of an old pleurisy occurring years before, and in which an adhesion had formed between the chest-wall and the diaphragm, pulling the diaphragm up. After opening beneath the rib I found something which at first I thought was a coagulum, as is sometimes found in a pleurisy, but I soon found it was omentum, and I inserted my finger in the opening and found the spleen. This was at a clinic, and I had previously called the attention of my students to the fact that, although I expected to find pus, yet I washed the patient and myself just as thoroughly as if it were a clean case, for the reason that no one could tell what might occur, and I wished to add no possibility of additional sepsis. The incision was sewed up and healed promptly. A few days later an opening was made, the fifth rib resected and the pus evacuated. Upon inserting my finger into this second opening I found it was fortunate I went down as low as I did, because if I had taken a rib above I would have gotten into the pus-cavity and the peritoneal cavity.

A FEW REMARKS ON ECLAMPSIA*

BY D. W. CRAIG, M. D.

SIoux FALLS, S. D.

Of the various ailments which the physician is called upon to treat, there is none attended with more sorrow, anxiety, frightfulness, and difficulty; few with higher mortality and more unsatisfactory response to treatment, than eclampsia. Sorrowful because its victim is usually a young wife or the mother of several children and being in the prime of life, in her the hopes of home and future happiness are tied up. The anxiety is due to the uncertain outcome, and even more as to what shall be done in the way

of treatment. The suddenness of the attack and the inability to cope with it in a satisfactory manner—all tend to create excitement and anxiety. The sight of a woman who has enjoyed good health up to within a short time of the attack and who is suddenly taken with a painful convulsion, frothing at the mouth and distorted features, produces indeed a most frightful scene.

The word *eclampsia* is taken from a Greek word meaning to shine out or burst forth, suggested by its sudden onset.

A definition might be framed as follows: A convulsion or series of convulsions occurring

*Read before the South Dakota State Medical Association, May 29 and 30, 1907.

shortly before, during, or soon after parturition. They resemble epilepsy in appearance, but are without the history of previous attacks. The onset is sudden, and the convulsions follow each other in frequency from a few minutes to several hours, depending upon the severity of the toxemia and the treatment.

The term eclampsia or puerperal convulsions should not include all forms of convulsions occurring at or near labor.

Hysterical convulsions are recognized by the presence of "globus;" the history of the case; abundant urine; and by the fact that in hysteria the patient can be aroused and is not in deep coma, and does not froth at the mouth or hurt herself in any way.

Apoplexy of the brain is distinguished by signs of paralysis. . Why should a woman not have an attack of apoplexy at such a time when the blood-vessels are distended and the conditions for the rupture of a cranial vessel so ideal? The symptoms of hysteria and apoplexy should be sufficient to enable us to differentiate these troubles from puerperal eclampsia. It has been my lot to observe one case of hysterical convulsions occurring within twenty minutes after labor. The patient was very nervous and religiously inclined. A hail-storm broke a pane of glass near her head. She was scared and at once went into convulsion, singing, praying, and making odd movements, which indicated that it was purely hysterical. The favorable result confirmed the diagnosis.

In speaking of the symptomatology my remarks must be limited to what I have heard and read on the subject, for it has not been my lot to see a case of eclampsia. Premonitory symptoms are usually, if not invariably, present. The non-observing may overlook them or be called after it is too late to witness them. The latter is usually the case. The most common prodromal symptom is severe headache, which may be limited to one side of the head. Vertigo, which may be transient, spots before the eyes, loss of sight, and deranged mental faculties are not uncommon. Irritability, stupor, malaise, edema of the face or extremities, ringing in the ears—one or more of these are nearly always present in some degree for several days before the attack. A very important symptom is pain in the epigastrium. It seems the more sudden and severe the onset the less chance there is for recovery; while the slower and more prodromal signs we have the better is the result. During the attack the eyes

are turned upwards, the eyelids quiver, the mouth is drawn to one side or the other and twitched spasmodically, the tongue is thrust out and is frequently injured, frothing at the mouth, the countenance is frightfully distorted, and the whole body is convulsed. Respiration is hurried and stertorous and later may be almost suspended. The carotids beat violently, and the jugular veins are much distended. The pulse in the beginning is full, frequent, and tense, but soon becomes rapid, small, and eventually almost imperceptible. The urine and feces may be passed involuntarily, a cold clammy sweat bedews the whole body, and the fit now begins to decline. The fit lasts for a few minutes, and during the interval of the convulsions the patient is generally insensible, lying in a state of stupor, motionless. Sometimes she awakes from her stupor and sits up in bed and looks wildly about. If questioned she knows nothing of what has occurred. Varying from a few minutes to several hours, the symptoms just described come on again. It is a common observation that uterine contractions are set up by the convulsions, even when they occur in the sixth, seventh, or eighth month, and labor is begun. When the convulsions begin during parturition the labor proceeds more rapidly, and the babe is born apparently without pains. At times when labor is over and the uterus is emptied, all the symptoms cease and the patient recovers; but this is not always the case, and at times the emptying of the uterus does not affect the convulsions at all. In fact, the convulsions may begin after the uterus is empty. In mild cases there may be only two or three convulsions, while in the severer types there may be fifty or sixty. The involuntary, as well as the voluntary, muscles are involved. In the very start there is a tonic spasm, which is soon followed by rapidly recurring clonic spasms. So much for the symptomatology.

The etiology is still obscure and uncertain. The fact that so many theories are advanced is sufficient proof that we are ignorant of the true cause. The consensus of medical teachings regarding the etiology is that, instead of there being only one cause, there may, and in all probability are, quite a large number of important etiological factors that may bring on convulsions. Hysterical convulsions are not uncommon. A woman may suffer from an attack of apoplexy during or about the time of parturition. Pressure from a brain tumor or the great exhaustion which some suffer at child-birth are sufficient to cause convulsions. The naturally irritable state of a pregnant woman may become exaggerated near the

time of labor and end in convulsions. Irritations, such as turning the child, the dilating of a hard cervix, or the presence of a dead fetus may be the cause. An over-distended bladder or a bowel full of hard fecal matter may be the necessary condition in order to call the true cause, if there be one, into action. Some authors try to explain and attribute eclampsia to anemic conditions of the brain and deep nerve-centers. Others say that eclampsia is due to a deportation of placental cells; and still others that a new substance (syncytiolysin) is formed by these cells, which neutralizes their toxins, and when the placental cells are very numerous this substance is formed in large amount, and the excess amount, they say, causes eclampsia. Zweifel's theory is that lacticaciduria is the etiological factor of eclampsia, and that whenever lactic acid is found in the blood or urine labor should be brought on at the first appearance of eclampsia. This is probably derived from the meat ingested and is a result of imperfect oxidation. Lactic acid appears after the use of morphine, and hence, according to Zweifel morphine is contraindicated. His treatment is venesection and subcutaneous injection of one quart of water containing five grams of sodium chloride and five grams of sodium bicarbonate, which aids in the elimination of lactic acid. This is done in addition to the induction of labor.

Most writers agree, in a general way, that eclampsia is due to the presence in the system of a toxine, which should have been eliminated by the skin and kidneys and which produces the acute anemia of the brain, which is supposed to be the immediate cause of the convulsions. The kidneys may be diseased and yet functionally sufficient, or they may be healthy anatomically and functionally insufficient for the double work.

The condition of the nervous system in puerperal women is a very important factor in predisposing to convulsions. Dr. Tyler Smith clearly pointed out that the key to the liability of the puerperal woman to convulsions is no doubt to be found in the peculiar excitable condition of the nervous system. In children the highly developed condition of the nervous system is very like that of the pregnant woman, and the common occurrence of similar convulsions in children is quite well known. All that is needed to bring on eclampsia is the application of a sufficiently exciting cause. The question is, where do we find the exciting cause in the pregnant woman? It may be (1) toxemia, of some kind; (2) extreme

watery condition of the blood; (3) anemia of the brain and deep nerve-centers; (4) local irritation of the uterus by a large or dead fetus; (5) irritation of a hard cervix by pressure from the fetus; (6) strong emotional disturbance; (7) diseased or insufficient kidney action, also sluggishness of the skin and other organs causing retention of poisonous substances; (8) diseased placenta.

Albuminuria is, of course, only a symptom, but should always be looked for and should put us on our guard to detect and remove the cause, if possible.

Prophylactic Treatment.—Everything in and around the lying-in chamber should be as quiet as possible; no excitement in any form should be tolerated. The doctor who comes in excited and makes a hurried examination and talks about the seriousness of the case before the patient or shows his excitement and wants consultation at once, will frequently see cases of eclampsia.

Not one person more than is needed to wait upon the patient should be admitted to the sick-chamber, with the possible exception of the husband. Relatives and good neighbors can do no good unless they are acting as nurse or assistant and should not be admitted. They are ever ready to give advice and cause trouble in general. We can never tell what effect the presence and talking of unnecessary persons in the room may have upon the patient. Keep the patient's mind as quiet as possible, and free from fear and assure her that she will be all right and never talk about the severity of the case in the patient's hearing.

In all suspected cases where we have albuminuria and an irritable or plethoric patient, a nurse who is quiet and non-talkative, efficient, and acquainted with the methods of the physician in charge, should be given charge of the patient for a week or two preceding the time of expected labor. She should be instructed to watch closely the patient's diet, exercise, bowel movements, and amount of urine voided, and also to keep the patient free from all excitement, and to see that she gets sufficient rest and sleep, and daily sponge baths, either cool or luke-warm, according to the patient's physical condition.

The treatment arranges itself under the following heads:

1. The convulsions, which must be controlled by sedatives; such are chloroform, ether, bromides, and morphine. These may be employed with other treatment, and are very necessary at times.

2. Labor should be induced and terminated as soon as possible when this can be done without too much irritation; and when done, it must always be under complete surgical anesthesia. When the os is hard and resistant, delay is often the best plan, for the irritation, due to dilatation and delivery, will frequently increase the severity and frequency of the spasms as soon as the effect of the anesthesia is past. In the vast majority of cases, labor follows closely upon, or may even occur during, the convulsions.

3. The time-honored treatment of venesection has fallen into disrepute, or, at least, into disuse. The statistics of our grand-fathers, who bled their patients for eclampsia, can not be surpassed by the average result of our many modern methods of handling these cases. The bleeding must be carried to the extreme point, until the patient is pulseless, and then if the convulsions recur the vein on the other arm must be opened and allowed to run until it stops of its own accord or until the patient begins to show signs of dissolution.

4. The modern substitute for bleeding, which some practitioners term a specific, is *veratrum viride*. This has its advantages in some cases, but it acts much in the same manner as bleeding, with probably more danger. *Veratrum viride* acts by reducing the arterial tension. It certainly reduces the tension, but often at the expense of heart-failure, and it should always be used cautiously and with caffeine and camphor. Chloral hydrate has been used with good success in some instances. We read of cases which recover where no treatment is given, and therefore we must not be too positive in attributing favorable results to the action of certain drugs or methods of treatment until a sufficiently large number of cases have been recorded to make the report of value.

DISCUSSION

DR. J. C. LITZENBERG (Minneapolis): I appreciate the honor your president has conferred on me by asking me to discuss this subject, but the hour is late, and I shall not detain you long.

I have had some experience with eclampsia. As to the etiology: there is very little, and I might almost say nothing, to say. It would be almost useless for us to discuss the causation when the pathologists are entirely at sea on the subject. Recent studies, however, show marked changes in the liver, but these are probably only parts of the chain of symptoms of a disease of unknown origin. Eclampsia is not a disease of the kidneys, but an examination of the urine is necessary in order to keep track of one's cases.

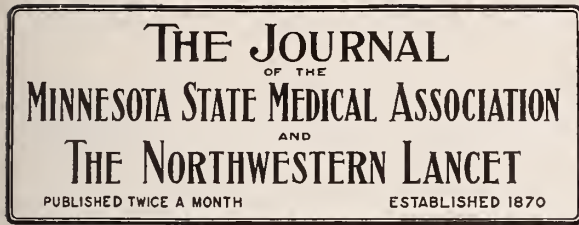
I shall not attempt to discuss the various methods of treatment, but will simply recite my method of management of this disease. The preventive treatment is sim-

ply diet, elimination, and hygiene; that means regulation of diet, the taking away of meat and giving a strictly milk-diet for a short time, gradually increasing the diet as each case will permit. Watch the urine and do not wait for the woman to have a convulsion. Now, if the woman has a convulsion what are we going to do? First, we must control the convulsions and then get rid of the trouble. For the control of convulsions I consider the administration of chloroform the best treatment. I do not use morphine, although morphine is advised by many good men. I do not use it, except in the occasional case, for the reason that it prolongs post-eclamptic coma. *Veratrum viride* is at once one of our most valuable and one of our most abused drugs in the treatment of eclampsia. It has its definite indications for use, and the contra-indications are just as definite. If you have a high, bounding, rapid pulse, *veratrum* is very valuable, but to be of any value at all it must be given in doses large enough to gradually bring the pulse down to 60 or 70 beats per minute. To get this effect, initial doses of 10 or 15 drops of the fluid extract may be given hypodermically and repeated in ten-drop doses every half hour until the pulse falls. Convulsions are very rare with a pulse as low as 60. But to give *veratrum viride* at all to a woman with a soft, thready, rapid pulse is distinctly contra-indicated. Morphine is better for these cases. I am one of those who believe that to get rid of the trouble the fetus must be removed as quickly as circumstances will permit. The deaths from eclampsia range from 35 to 50 per cent in the unoperated cases. After delivery eclampsia is not likely to occur in more than 7 per cent. I believe that one convulsion is sufficient indication for the immediate delivery of the woman.

Most obstetricians of the modern school believe that immediate delivery is necessary, but they do not all agree as to the best method of delivery. Some advocate rapid dilatation by the use of the Bossi dilator or some modification thereof. Others believe that manual dilatation is the better, and of late the vaginal cesarean section has met with considerable favor. I prefer the manual dilatation unless great haste is needed, in which case the vaginal cesarean section would be preferred, provided a skilled operator can be had. The case requiring extreme haste is very rare. The longest time I have ever had to employ to dilate a cervix is one hour and twenty-five minutes. The usual time should be from thirty to sixty minutes. The Bossi dilator, except in skilled hands, is a very dangerous instrument; therefore for the general practitioner I believe that manual dilatation is the operation to do. I wish to emphasize the fact that if it is within my power I never allow a woman to have a second convulsion, for, although we do not know the cause of eclampsia, we do know that the eclamptic woman delivered of her baby has five times better chance than if she be not delivered. This is shown by the statistics, and it has been my personal experience.

If I can leave the impression with you that the treatment, par excellence, for these cases is immediate delivery I shall have accomplished the purpose of my discussion.

DR. CRAIG (essayist): I feel well paid, indeed, for having read my paper by the very admirable discussion it brought out from Dr. Litzenberg and for the present he has given the local society in the way of the incubator. I thank you.



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MARCH 15, 1908

The annual meeting of the State Medical Association will be held at St. Paul, October 7 and 8, 1908.

THE AMALGAMATION OF THE MEDICAL DEPARTMENTS OF THE STATE UNIVERSITY AND HAMLINE

At the meeting of the Board of Regents of the University of Minnesota, held on March 4th, the two medical schools of Minnesota were consolidated into one greater and active department. Negotiations between the faculties has been in progress for several months and an amicable plan was finally devised whereby the students of Hamline were taken into the University of Minnesota. Six members of the Hamline medical faculty join the teaching force of the University, as a part of the compact.

For the next four years the faculty, or, rather, the stockholders of the Hamline Medical School, will retain their organization until all of their present students are graduated. Beginning with the next fall term the Department of Medicine and Surgery of the University of Minnesota will be the only medical teaching body in Minnesota.

No more students of medicine will be received by Hamline even though the faculty organization is nominally in existence.

Although the present Hamline students will be instructed at the State University their diplomas will be given them by the Hamline trustees. This arrangement seemed best under the circumstances in justice to both schools and both student bodies.

The buildings now occupied by Hamline Medical School will not be used for teaching purposes unless the University of Minnesota acquires the property. At the end of four years, when all of the Hamline students who qualify for medical degrees are graduated, the stockholders surrender its charter as a medical school.

Hamline has been an aggressive school for a long time, but has been financially handicapped, and the men who have borne the burden thus long, decided that they could not conscientiously go on with the work.

The amalgamation of the two schools will elevate the standard of medical education in Minnesota and will furnish an additional amount of clinical material for medical instruction. With the state of Minnesota behind the Medical Department of the University, it is expected that a powerful school will grow year by year. The union of the schools will doubtless be heartily approved by the profession of the Northwest.

The members of the Hamline faculty, who join the University of Minnesota, are as follows: Dr. H. B. Sweetser, department of surgery; Dr. J. Frank Corbett, department of surgical pathology; Dr. Geo. C. Barton, department of gynecology; Dr. J. A. Watson, department of throat and nose; Dr. C. N. Spratt, department of ophthalmology; Dr. Charles F. Dight, department of pharmacology.

THE HENNEPIN COUNTY MEDICAL SOCIETY'S NEW LOCATION

In the new Donaldson building, on Nicollet avenue and Seventh street, the Hennepin County Medical Society and its large library have at last established themselves in satisfactory and permanent quarters.

Mr. L. S. Donaldson has very generously allotted a large space on the eleventh floor of his new building to the Society, rent free. He has signed a contract to extend over ten years to house the Society, and through his manager, Mr. J. S. Mitchell, he has virtually offered the rooms

for all time. His only compensation is the rental of offices on other floors to a large number of physicians who have been seeking more space in a thoroughly modern building. The trustees, through Dr. J. G. Cross, accepted the rooms and space in the same spirit that prompted Mr. Donaldson to offer them.

The rooms are large enough to comfortably seat about two hundred persons and furnish sufficient side-wall space for the library books. Committee-rooms and retiring- and cloak-rooms open from the large audience-room. A competent library attendant has charge of the rooms, which are open day and evening.

The rooms were opened Monday, March 2d, by a regular meeting attended by a large number of the members. The inaugural paper of the evening was delivered by Dr. L. B. Wilson, of Rochester, as noticed on another page. Dr. Wilson's paper will be published in a later issue of THE JOURNAL-LANCET. The new process of color photography was incidentally introduced by Dr. Wilson and showed the remarkable possibilities of reproducing pathological findings in natural colors.

The evening was rounded out with a buffet supper, always dear to the doctor, who usually disregards digestion and food-values when anything eatable is within his social reach.

THE RECEPTION-HOSPITAL AT ST. PETER

The old center building at the St. Peter State Hospital for the Insane has been remodeled into a modern reception-hospital and is opened for patients this week.

The whole interior structure has been rebuilt on a fireproof basis and will accommodate about 60 patients. The lower floor is occupied by officers' quarters, visitors' reception-room, telephone-room, drug-room, and officers' dining-room. The second and third floors are devoted to day-rooms, dormitories, and rooms for isolated cases. The fourth floor is divided into library, laboratory, and surgical rooms. The laboratories are fully equipped with new appliances for bacteriological and pathological investigation. The surgical room or operating-room and the adjoining sterilizing-plant are unequaled by any hospital in the middle west.

The construction, light, and equipment would please the most fastidious surgeon and have al-

ready been dedicated by capital operations by prominent surgeons.

The rooms adjoining the operating-rooms are designed for recovery-cases, that is, cases that have undergone operations.

The rooms on the second and third floors for excited cases that need isolation and separation are models in construction and comfort, and are so arranged that they can be shut off from the rest of the hospital, thus insuring quiet and management.

Perhaps the greatest departure in the reconstruction of this hospital is the arrangement of bath- and toilet-rooms.

Everything that is at all objectionable or unnecessary in the way of plumbing is placed in a light-well, which is accessible from the main corridor, and the "roughing in" of all accessories for ventilation, water-supply, drains, and flushing is so superior that no modern hospital dare fall below the standard devised by Dr. Tomlinson. The average plumber and builder is anxious to display brass or nickel trimmings, to make as much show as possible. In this new hospital and in the new nurses' home, Dr. Tomlinson has eliminated everything but porcelain, except the inserted faucet and drain-plugs. A moderate-sized bathing-pool, constructed of stone, instead of an array of clumsy bath-tubs, has been constructed to facilitate rapid and safe bathing methods for a number of patients.

The floors of the whole building are tiled, and every convenience essential to cleanliness has been devised.

Visiting physicians and friends of patients will be gratified to find a hospital that combines all of the features of a private hospital, as well as the advanced methods in plumbing that no other general hospital possesses.

If Dr. Tomlinson can be persuaded to publish his plans for hospital construction he will revolutionize our old ideas. The greatest difficulty to be encountered is to persuade architects and builders to adopt the measures so briefly outlined here. Another difficulty will be in the education of those who contemplate hospital building, to sacrifice the ornamental for the practical needs of an up-to-date hospital. Supply-houses object to the simplified methods because it deprives them of the sale of outfits that are for show, and not for practical needs. The time will come when every new hospital will take advantage of the advanced scientific and hygienic construction methods.

REPORTS OF SOCIETIES

MINNESOTA ACADEMY OF MEDICINE

The March meeting of the Academy was held at the Minneapolis Club, Minneapolis, on the evening of the 4th.

Dr. C. H. Hunter reported a case of bleeding from the mouth in an infant one day old. The bleeding came from a point where the bones meet in the posterior middle portion of the mouth. It was checked twice for a few hours each time by the use of styptics and lunar caustic, but it returned again. Finally the child was taken to the office, where a small pointed electro-cautery was applied and stopped it entirely.

Dr. Thomas McDavitt then read a paper entitled "Glioma Retinæ."

In the discussion that followed Dr. F. C. Todd stated that the few cases of the kind that he had seen resulted in death. One apparent exception was a case which he had diagnosed early and advised operation, but the people had gone elsewhere for the operation and he understands that the patient recovered.

Dr. Macnie of Minneapolis, a guest of Academy, spoke of the vivid impression he had of the first case he saw of this nature, where a tumor as large as a water-glass was hanging from the eye. He stated that in European clinics which he had visited recently, the x-ray had been used with marked benefit to the extent of emptying the orbit, but they do not claim any cures through this means.

Dr. McDavitt, in closing, referred to the terrific ordeal of having to deal with a case of this kind, where, without any warning or consciousness on the part of the patient of the serious nature of the case, it becomes the duty of the physician to advise immediate operation in order to save life. Nothing is more rapid in its progress, and a delay of six weeks or even a month is enough to render operation hopeless. Yet in the nature of things one cannot blame the people for going round among the doctors in the vain hope of finding some other means of relief. In the case reported only three weeks elapsed between discovery of the disease and the operation, and though two years have now gone by without its return, yet one must not be surprised to have it reappear at any time.

Dr. Chas. L. Greene read a paper entitled "The Treatment of Gastric Ulcer."

Dr. J. E. Moore, in discussing the subject, ex-

pressed satisfaction at being counted among the conservative surgeons in the treatment of this disorder. He believes that in the vast majority of cases ulcer of the stomach is properly a medical case. He advises surgical interference only in cases of pyloric obstruction, hemorrhage, or chronic invalidism where medical resources have been exhausted. He thinks the operation of gastro-enterostomy has cured many cases, and yet it seems an unnatural surgical procedure, and he believes that a better one will be known some day. In the hands of a competent operator the mortality following gastro-enterostomy is small. He had only this month the first death from the operation in his experience, and it resulted from the tearing of the stomach-wall in the endeavor to break up old adhesions and bring the stomach up into the field. On the fourth day after the operation the patient went into collapse and died suddenly with every appearance of internal hemorrhage.

Dr. H. B. Sweetser said he could not agree with Dr. Greene as to the prognosis in ulcer of the stomach, for he has seen many cases die from hemorrhage, perforation, etc., and has made autopsies and found the conditions present. He has had them die from complications with the ulcer and from emaciation, therefore, he cannot accept the proposition that "there is no mortality from ulcer of the stomach." He raised the question whether the treatment of gastric ulcers medically is any more satisfactory than of ulcers elsewhere in the body.

Dr. H. L. Staples thought that one point in diagnosis which had not been mentioned, was the careful study of the stools for evidence of blood that could not be otherwise recognized. As to treatment, he thinks that any fixed plan of treatment will not succeed. Every case must be individualized and the remedies applied according to the needs of that particular case. He believes that anemia is often an important factor in preventing healing of the ulcer.

Speaking of the uncertainty of cures, he cited a case which he had cured twice, and, later, some other physician had cured twice; then Dr. Sweetser had operated on her and cured her, and just recently the patient had floated into his office in about the same condition as at first, or perhaps a little worse. He condemns the bismuth treatment as wrong because of its tendency to produce constipation.

Dr. F. R. Wright suggested that perhaps the cure wrought by surgeons is through the change in the circulation, which results from such pro-

cedures, as evidenced by its effect upon ulcers elsewhere in the body.

Dr. J. C. Stewart had made autopsies upon at least six cases in which death had occurred as the direct result of ulcer of the stomach. It is true, however, that they were public hospital cases. The analogy between ulcer of the stomach and that of the leg is not, he thinks, well drawn, for the reason that the circulation in the stomach is very abundant, and the causes of ulcer of that organ are not well understood.

Dr. J. W. Little regarded the paper as very fair to both the surgeon and the internalist. In his experience, death from ulcer of the stomach is very rare, so also is that from pus-tubes or from gall-stones. All these conditions, however, tend to produce chronic invalidism, and perhaps many of these patients prefer to take chances under operation rather than to continue to live in this state. He believes that we are working out the problem gradually; that medical treatment should be applied first, and that acute cases should not be operated upon. Gastro-enterostomy he considers a better procedure than excision. In answer to the question as to whether excision increases the risk, he said that it depends altogether on where the ulcer is located. He gave a very interesting and instructive account of his observations of the surgical treatment of gastric ulcer while abroad last summer.

Dr. J. W. Bell agreed with the essayist that the first and principal point is to be sure that one is treating an ulcer. He emphasized the importance of a period of complete rest in bed for, at least, a short time, in every case. Under this plan he invariably finds that the pain disappears without the use of opiates. His observation is that it is the rule for patients to re-develop the symptoms after gastro-enterostomy.

Dr. L. A. Nippert favored the feeding method of treatment rather than that of starving. He has seen at least two cases of death from ulcer of the stomach. He related some of the methods of treatment which he had observed among the European doctors last summer.

Dr. George Douglas Head declared that he could not understand how a conscientious surgeon can figure out the proposition that the making of another hole in the stomach by gastro-enterostomy is going to be a benefit to the patient. He questions whether or not the period of rest in bed following the operation is not the real cause of improvement rather than the operation itself. The question of diagnosis is most important. Many times the operating-room reveals the fact

that stomachs are opened for neuroses, etc., while some cases that have been called gastric ulcer have, under careful study, proven to be cases of gall-stone. Great care should be exercised in diagnosing ulcer unless there is pain in connection with the taking of food.

In answer to his question, Dr. Moore says that the surgeon does not attempt to explain how this new hole in the stomach cures the patient, but perhaps it is by putting the diseased part at rest.

Dr. Thos. Roberts said that he had found that all cases put to bed and treated got well, and those that he had treated so have remained well for several years. He believed that all cases should be treated medically.

Dr. Greene, in closing, emphasized the unreliability of figures and statistics bearing upon this subject. He refused to go on record as either a "starver" or a "feeder" in the treatment of gastric ulcer, as he believes that each case must be its own law in this respect. He seldom finds that he has to treat pain as such, and when he finds that rest in bed and treatment of the case do not relieve the pain he advises surgical interference without delay. As to mistakes in diagnosis, he feels that at least when the internalist is in error he does not do his patient actual harm as the surgeon is likely to do when he is in error. He emphasized the importance of nutrition in the healing of the ulcer. On the whole, he is of the opinion that we are coming closer together in our view of the matter, and our methods are constantly coming nearer the right.

ARTHUR W. DUNNING, M. D., Secretary.

HENNEPIN COUNTY SOCIETY

A regular meeting of the Hennepin County Society was held on February 3d. The president, Dr. F. A. Knights, occupied the chair, and 35 members were present.

The following physicians, having been favorably reported upon by the Censors, were duly elected to membership:

Dr. Lucius F. Foote, 603 Masonic Temple; and Dr. J. H. Higgins, 2302 Lake St. E.

It was moved that the dues for 1908 be fixed at \$7.00.

Dr. A. E. Benjamin reported for the committee on furnishings that the rooms would be ready for the next meeting.

The scientific program being in order Dr. Archa E. Wilcox read a paper on the "Treatment of Injuries of the Hand," and the paper was discussed by Drs. J. F. Corbett, C. G. Weston, H. B. Sweetser, A. E. Benjamin, Robert Williams, H.

W. Cook, and, in closing, by Dr. Wilcox.

Dr. A. S. Hamilton read a paper on "Mental Contagion."

Dr. R. E. Farr showed specimens of renal calculi; also cystic kidney.

Dr. H. B. Sweetser showed specimens of Meckel's diverticulum and a large fibroma of the uterus, enclosing a fetus.

The March meeting was held on the 2d inst., the president, Dr. F. A. Knights, being in the chair, with 120 members present. The names of Dr. John T. Litchfield and Dr. Mabel S. Ulrich were proposed for membership.

The Society's new quarters in the Donaldson building were formally tendered to the Society by Mr. J. S. Mitchell on behalf of Mr. L. S. Donaldson, and were accepted for the trustees and Society by Dr. J. G. Cross. Dr. L. B. Wilson, of Rochester, read a paper on "The Value of Soudern's Leucocyte Resistance Line in Acute Appendicitis," which was illustrated by lantern-slides. The paper was discussed by Drs. S. M. White and F. A. Dunsnoor, and the discussion was closed by Dr. Wilson.

C. H. BRADLEY, M. D., Secretary.

NEWS ITEMS

Dr. D. F. Wood, of Hanska, has moved to Faribault.

Dr. W. A. Day, of Sparta, has decided to locate in the west.

Dr. J. E. Carman has been elected city health officer of Detroit.

Dr. Ingeborg Taustrom has moved from Lindstrom to Finlayson.

Dr. Guy Stone, of Davenport, Iowa, has located at Minot, N. D.

Dr. O. R. Pozodena, of New Prague, has moved to Winfield, N. Y.

Dr. G. S. Carpenter has moved from Porter, in this state, to Glenham, S. D.

Dr. D. C. Rood, of Hibbing, accompanied by his wife, will spend four or five months in Europe.

Dr. H. E. Nelson, of St. Hilaire, will hereafter be associated with Dr. Holte in hospital work at Crookston.

Dr. W. E. Kiteley, of Fairmount, N. D., has purchased a large building which he will use for hospital purposes.

Dr. P. R. Pinard, of Geddes, S. D., has gone to Omaha, Neb., to spend several months in post-graduate work.

Dr. John Crawford, of Esmond, N. D., was married last month to Miss Katherine Agnes O'Malley of Morris.

St. Olaf's hospital at Austin is to be enlarged. The new addition will add eight good rooms to the present building.

Dr. A. A. Westeen, of Grand Forks, N. D., has returned from Europe, where he went to do eye, ear, nose and throat work.

Dr. C. F. Coulter, of Wadena, has been doing post-graduate work in Chicago, in his specialty, eye, ear, nose and throat work.

Dr. J. H. Kaufman, of Dassel, has gone south on account of his health. He hopes to be able to resume his work in a few weeks.

Dr. E. O. Zoyer, of Minneapolis, was operated upon for appendicitis last month by Dr. J. W. Byrnes at St. Mary's Hospital.

Fargo's new \$50,000 hospital, St. Luke's, received its first patient on February 24th. Fifty patients can be cared for in the hospital.

Several doctors lost their instruments and office furniture in a fire that destroyed the Wedge-Jones block in Albert Lea on March 2d.

Dr. J. L. Edsall, of Bradley, S. D., was married last month to Miss E. Lenhart of the same place. Dr. Edsall is a State University graduate, class of '92.

Dr. J. W. Stribling has moved from Jamestown, N. D., to Dickinson, N. D., and entered into partnership with Dr. Stephen Fisher, of the latter place.

Work will begin at once on the superstructure of the new hospital at Bismarck, N. D. A three-story building, 80x120 feet, will be a credit to Bismarck.

Dr. T. M. Thayer, who has been connected with the State Hospital at Fergus Falls for the past six years, has begun general practice at Cold Spring.

Drs. W. J. and C. H. Mayo have presented Rochester \$12,000 for the purchase of additional land for Mayo park, and also to make improvements in the park.

Dr. Howard S. Clark will give up practice at Glencoe, and will locate in some large city in order to devote his time exclusively to eye, ear, nose, and throat work.

Dr. A. G. Stoddard, of Fairfax, has sold his practice to Dr. A. M. Crandall, of St. Paul Park. Dr. Stoddard will spend some time in the south with his wife, who is not in good health.

The medical department of Hamline University has been merged with the medical department of the State University. Further reference to this change is made in our editorial columns.

The spring buying of automobiles has begun. Dr. Oscar Daignault, of Benson, was in Minneapolis recently, and went home with a 20-horsepower Reo, and Dr. Watland of Albert Lea bought a Ford.

Dr. A. L. Hammerel, of Glendive, Montana, was married last month to Miss Anna Martha Wolf, of Stillwater. Dr. Hammerel is a State University graduate, class '06, and formerly practiced at Stillwater.

Dr. Frank X. Boucher and wife were killed at Delano on the 10th instant. They were struck by a fast train while crossing the tracks. Dr. Boucher graduated from Hamline in '06, and was married a few months ago to Miss Minnie M. LeDuc, of Minneapolis.

Dr. W. L. Beebe, president of the Stearns-Benton County Medical Society, has given public notice to the members of the society that the written agreement binding themselves to charge a fixed fee for life-insurance examinations, has

been broken, and thus all are relieved from its terms.

The following appointments as internes in the City and County Hospital, St. Paul, were made last month: Dr. John S. Abbott, University of Pennsylvania; Drs. J. S. Walker, J. T. Smallwood, Roland A. Bock, Charles N. Hensel, University of Minnesota; Drs. Edward Schons and Ed. W. Johnson, Hamline, and Dr. Edward B. Goltz, Northwestern.

FOR SALE

An operating-chair and compressed-air tank. They may be seen at J. Menver's, 8 Fourth St. S. E., Minneapolis.

PHYSICIAN WANTED

Exceptional opening for wide-awake German physician. The best, old-settled farming section in this big, wide world. Nothing to buy. Move right in and go to doing business. For particulars write or telephone Buzzell Drug Co., Janesville, Minn.

PHYSICIANS' ATTENTION.—Drug-stores on easy payments, etc. Drug-store positions, United States or Canada. F. V. Kniest, Omaha, Nebr.

DOCTOR: If you want practical post-graduate work during fine season in the delightful city, write for particulars. New Orleans Polyclinic. P. O. Box, 797, Post-Graduate Department, Tulane Medical College.

DEATHS REPORTED TO THE STATE BOARD OF HEALTH OF MINNESOTA FOR THE MONTH OF DECEMBER 1907, REPORTED FROM STATE INSTITUTIONS FOR MONTH OF DECEMBER, 1907

STATE INSTITUTIONS.	Total Deaths												
	Tuberculosis of Lungs	Other Forms of Tuberculosis	Pneumonia	Bronchitis	Diphtheria	Scarlet Fever	Measles	Smallpox	Whooping Cough	Cerebrospinal Meningitis	Typhoid Fever	Diarrheal Diseases of Children	Puerperal Septicemia
Fergus Falls, Hospital for Insane.....	11	2	1										
Rochester, Hospital for Insane.....	4												
St. Peter, Hospital for Insane.....	2												
Anoka, Asylum.....	1												
Hastings, Asylum.....	*												
Faribault, School for Deaf.....	*												
Faribault, School for Blind.....	*												
Faribault, School for Feeble Minded.....	5	1			2								
Owatonna, School for Dependents.....	1												
Stillwater, State Prison.....	*												
St. Cloud, State Reformatory.....	*												
Red Wing, State Training School.....	*												
Minneapolis, Soldiers' Home.....	3	1	1										
Totals.....	31	5	1	1	2								

REPORTED FROM 72 CITIES HAVING A POPULATION OF 1,000 OR UPWARD
FOR THE MONTH OF DECEMBER, 1907

CITIES	Population of U. S. Census of 1900	Population of State Census of 1905	Total Deaths	Tuberculosis of Lungs	Other Forms of Tuberculosis	Pneumonia	Bronchitis	Diphtheria	Scarlet Fever	Measles	Smallpox	Whooping Cough	Cerebrospinal Meningitis	Typhoid Fever	Diarrheal Dis- eases of Child- ren	Puerperal Septicemia	Cancer
Albert Lea.....	4,500	5,657	6	0	1										1		
Anoka.....	3,769	4,053	6	1													
Austin.....	5,474	6,489	6	1												1	
Barnesville.....	1,326	1,566	2	1													
Bemidji.....	2,183	3,800	2	1													
Blue Earth.....	2,900	3,364	5	1													
Brainerd.....	7,524	8,131	12	4				1									1
Chaska.....	2,165	2,085	4	*													
Chatfield.....	1,426	1,300	2	*													
Cloquet.....	3,074	6,117	5	1				1							1		
Crookston.....	5,359	6,794	5	1													
Detroit.....	2,060	2,149	5	1													
Duluth.....	52,968	64,942	79	10	1	14	1	3		3		1	1	2	4		
E. Grand Forks.....	2,077	2,489	5	1		2											
Ely.....	3,712	4,045	4	*											1		
Eveleth.....	2,752	5,332	9	*		3								2			
Faribault.....	7,868	8,279	5	*													
Fairmont.....	3,440	2,955	2	*		1											
Fergus Falls.....	6,072	6,692	5	*													
Granite Falls.....	1,214	1,340	2	*													
Hastings.....	3,811	3,810	2	*													
Hutchinson.....	2,495	2,489	4	*													
Jordan.....	1,270	1,311	1	*													
Lake City.....	2,744	2,877	5	1													
Litchfield.....	2,280	2,415	1	*													
Little Falls.....	5,774	5,856	12	3		1											
Luverne.....	2,223	2,272	3	*		1								1			1
Le Sueur.....	1,937	1,842	1	*													
Madison.....	1,336	1,604	4	*													1
Mankato.....	10,559	10,996	8	1		2											
Marshall.....	2,088	2,243	1	*													
Melrose.....	1,768	2,151	0	*													
Minneapolis.....	202,718	261,974	214	26	6	46	6	6	2			2	1	6	6		13
Montgomery.....	979	1,281	0	*													
Montevideo.....	2,146	2,595	1	*													
Moorhead.....	3,730	4,794	10	*		2		1									
Morris.....	1,934	2,003	*	*													
New Prague.....	1,228	1,419	3	*				1									
New Ulm.....	5,403	5,720	6	*													
Northfield.....	3,210	3,438	3	*										1			
Ortonville.....	1,247	1,612	*	*													
Owatonna.....	5,561	5,651	3	1													
Pipestone.....	2,536	2,885	*	*									1				
Red Lake Falls.....	1,885	1,797	*	*													
Red Wing.....	7,525	8,149	13	1													
Redwood Falls.....	1,661	1,806	1	*													
Renville.....	1,075	1,229	0	*													
Rochester.....	6,843	7,233	17	*		2											
Rushford.....	1,100	1,133	1	*													
St. Charles.....	1,304	1,238	3	*													
St. Cloud.....	8,663	9,422	8	*		3											
St. James.....	2,607	2,320	0	*													
St. Paul.....	163,632	197,323	199	24	6	20	3	2	2			1		6	5	1	14
St. Peter.....	4,302	4,514	3	1			1										
Sauk Centre.....	2,220	2,463	2	1													
Shakopee.....	2,046	2,069	1	*													
Sleepy Eye.....	2,046	2,312	0	*													
So. St. Paul.....	2,322	3,458	4	*		2											
Stillwater.....	12,318	12,435	17	2		4								2			
Thief River Falls.....	1,819	3,502	3	*		1		1									
Tower.....	1,366	1,340	*	*													
Tracy.....	1,911	2,015	*	*													
Virginia.....	2,962	6,056	10	*		2									1		
Wabasha.....	2,528	2,619	*	*													
Warren.....	1,276	1,640	1	*													
Waseca.....	3,103	2,838	2	*													
Waterville.....	1,260	1,383	2	*													1
West St. Paul.....	1,830	2,100	*	*													
Willmar.....	3,409	4,040	5	*		1									1		
Windom.....	1,944	1,884	1	*													
Winona.....	19,714	20,334	27	3		4						1		1			
Worthington.....	2,386	2,276	1	*		1											

*No report received Health officer not doing his duty

REPORTED FROM 65 VILLAGES HAVING A POPULATION OF 1,000 OR UPWARDS

FOR THE MONTH OF DECEMBER, 1907

VILLAGES	Population of U. S. Census of 1900	Population of State Census of 1905	Total Deaths	Tuberculosis of Lungs	Other Forms of Tuberculosis	Pneumonia	Bronchitis	Diphtheria	Scarlet Fever	Measles	Smallpox	Whooping Cough	Cerebrospinal Meningitis	Typhoid Fever	Diarrheal Dis- eases of Children	Puerperal Septicemia	Cancer
Ada.....	1,253	1,515	*	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Adrian.....	1,258	1,184	**	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Aitkin.....	1,719	1,896	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Akeley.....		1,636	2	..	..	1	..	..	..	..	..	..	..	..	..	..	..
Alexandria.....	2,681	3,051	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Appleton.....	1,184	1,321	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Belle Plaine.....	1,121	1,301	0	..	..	..	..	..	..	..	..	..	..	1	..	..	..
Benson.....	1,525	1,766	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Breckenridge.....	1,282	1,850	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Buffalo.....	1,040	1,124	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Caledonia.....	1,175	1,405	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Canby.....	1,100	1,505	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cannon Falls.....	1,239	1,460	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cass Lake.....	546	1,062	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Chisholm.....		4,231	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Dawson.....	962	1,056	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Delano.....	967	1,023	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Fosston.....	864	1,000	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Frazee.....	1,000	1,146	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Glencoe.....	1,780	1,805	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Glenwood.....	1,116	1,718	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..
Graceville.....	856	1,032	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Grand Rapids.....	1,428	2,055	4	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Hallock.....	805	1,014	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Hibbing.....	2,481	6,566	10	..	..	2	..	..	..	..	..	..	..	..	..	..	..
Jackson.....	1,756	1,776	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Janesville.....	1,254	1,205	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Kasson.....	1,112	1,049	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Kenyon.....	1,202	1,252	3	1	..	1	..	..	..	..	..	..	..	..	..	..	..
Lake Crystal.....	1,215	1,231	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Lanesboro.....	1,102	1,041	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Long Prairie.....	1,385	1,256	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Madelia.....	1,272	1,290	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Milaca.....	1,204	1,319	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Mountain Lake.....	959	1,063	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..
North Mankato.....	939	1,129	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
North St. Paul.....	1,110	1,400	2	..	..	1	..	..	..	..	..	..	..	..	..	..	..
Olivia.....	970	1,019	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Osakis.....	917	1,056	*	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Park Rapids.....	1,313	1,719	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Pelican Rapids.....	1,033	1,095	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Perham.....	1,182	1,366	*	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Pine City.....	993	1,092	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..
Plainview.....	1,038	1,140	2	..	..	1	..	..	..	..	..	..	..	..	..	..	..
Preston.....	1,278	1,320	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Princeton.....	1,319	1,704	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Rush City.....	987	1,041	2	1	..	..	..	..	..	..	..	..	..	..	..	..	..
Rushford.....	1,062	1,040	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
St. Louis Park.....	1,325	1,491	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Sandstone.....	1,189	1,589	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Sauk Rapids.....	1,391	1,552	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Scanlon.....		1,122	4	..	..	1	1	1	..	..	..	..	..	..	..	..	..
South Stillwater.....	1,422	1,572	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Springfield.....	1,511	1,546	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Spring Valley.....	1,770	1,573	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Staples.....	1,504	2,163	3	..	..	1	..	..	..	..	..	..	..	..	..	..	..
Two Harbors.....	3,278	4,402	2	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Wadena.....	1,520	1,868	5	..	..	1	1	..	..	..	..	..	..	1	..	..	..
Wells.....	2,017	1,814	4	..	..	1	..	1	..	..	..	..	..	..	..	..	..
West Minneapolis.....	2,250	2,530	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Wheaton.....	1,132	1,346	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..
White Bear Lake.....	1,288	1,724	*	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Winnebago City.....	1,816	1,553	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Winthrop.....	813	1,031	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Zumbrota.....	1,119	1,129	*	..	..	..	..	..	..	..	..	..	..	..	..	..	..
State Institutions.....			31	5	1	1	..	2	..	..	..	..	..	..	..	..	..
Other parts of State.....	1,012,328	1,085,886	639	48	1	69	5	22	8	3	3	2	2	7	12	..	38
Total for State.....	1,751,395	1,979,658	1505	135	16	195	18	47	12	6	3	7	5	36	32	3	72

Still births and premature births, 78 (not included in above totals).

*No report received Health officer not doing his duty

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MISCONCEPTIONS CONCERNING INSANITY

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A number of misconceptions concerning those insane frequently obtrude themselves. While they hardly afford suitable material to present to a county medical society, they seem to me to be of very great practical importance. They affect the character of many important decisions in active life. I will try to place them before the reader in a plain and untechnical way.

1. It seems to be commonly thought that there are in our hospitals many seniles who are not insane or who, at least, are not deserving of commitment. In the light of twenty years of experience, I am inclined to designate this opinion as distinctly erroneous. In an analysis of the reasons for this quite common opinion, I find it to arise from certain facts which may be gathered into the four following statements: First, seniles usually approach a dementia through a rather long stage of growing mental feebleness, and it is this stage that is seen most outside the hospital, and which is most in the mind of the critic; second, people have been led to think that mental enfeeblement is normal to old age; third, these cases may be "unloaded" on the state more easily, because of the physical weakness which comes with age; fourth, senile cases, being old, have but a short time to live, and thus are thought to be more appropriately kept at home.

Now, why are any patients sent to the hospitals? A statement made some fifteen years ago still seems to me to be valid: Patients are sent to the state hospitals, usually, not because of the degree of insanity, but because of the degree of "trouble," (or fear of trouble), that they cause.

I would then maintain that if the seniles (those over 60 years of age) cause a degree of trouble equal to that caused by other classes, they have an equal right to come. Their right rests on exactly the same basis. The purpose of all commitments is to relieve the family of a too great load and to distribute this load by taxes upon the state. This load or trouble is generally the financial difficulty of caring for a patient through a lifetime, the lack of suitable facilities in the home, the lack or the cost of medical service, the constraint and the danger in the family-life of having one insane among them, and, often indeed, the lack of a home or relatives to provide any care.

I would then give it as my general impression that the seniles make fully as much trouble as the young developmental cases, about as much as the adult cases, though less than the very acute cases and the paretics. But, as vague theorizing and impressions may be erroneous, we must look at the facts. I have just gone over, name by name, 330 consecutive admissions of men, each man intimately known, and covering the two-year period ending August 1, 1906. Of the 330 men, 40 were over 60 years of age. The ages were as follows: 7 were aged from 80 to 85 years, 4 from 75 to 80, 9 from 70 to 75, 7 from 65 to 70, and 13 from 60 to 65. Not all cases were purely a dementia. Two cases were inebriate, but mentally affected, and one was an unusual case, an imbecile admitted at age of 85.

How about the trouble in these cases? If we first divide them into two classes, we find that

25 of the 40 cases were *actively* troublesome, that is, they were violent or destructive, or restlessly demented, or profoundly melancholy. The other 15 cases may be called quietly troublesome. Yet of these 15, only 3 were able to give their own history, and 1 of these was an inebriate. The others were thus profoundly demented. Indeed, of the whole 40, only 4 did not give a history of trouble for at least a year before coming here, and in 3 of these 4 cases a stroke of apoplexy was sufficient excuse for an early commitment.

As to length of life, we cannot report so favorably. Of the 40 admissions, 6 died within one month after coming, 8 died before a year of residence was completed, and 2 have died in the one and one-half to three years which have since elapsed. Seven were taken home again, leaving 17 still in our care, fifteen months after the last commitment. If death could have been foreseen, it would of course have been advisable to have kept at home the 6 who died so soon.

I feel obliged to add, as a caution, that I do not say that there was never a commitment of a case while in a simply senile state, but such cases are rare, and it is easier to find removable cases among other classes of the insane.

2. The second misconception has been already incidentally stated. Neither the fact nor the degree of the insanity directly determines the commitment, in the majority of cases. It is the trouble they cause, as above outlined. Thus those profoundly insane may stay at home while those slightly affected may be committed. But, more than this, even *after* such commitment we are urged, and expected, to send away again all of those whom we can hope to make a small amount of trouble. We do thus send out each year a number equal to about 40 per cent of the number received, and about 25 per cent of that same number stay out the six months of probation, are then reported as doing well, and are discharged, with never a pretence that they are recovered.

3. Another common mistake is the assumption that insanity shuts out intelligence. By *intelligence* I mean the ordinary sane comprehension of many ordinary subjects. Of course, this mistake is made by laymen, but it affects, to some extent, all who have not come into intimate contact with a number of insane. I have had occasion to get good sound advice on law matters, and on medical matters, and, in fact, in all trades and occupations, from those who were yet adjudged not well enough to be free.

Taking the last 180 commitments, I find that

about 89 of them were able to give a fairly intelligent and reliable account of their own case-history. Others gave one less reliable, while only 28 were able to give practically none. Of the 28, 8 cases were of paresis, 6 were profoundly senile, 3 were cases of terminal dementia, 2 were in the incoherence of mania, and 4 were in profound melancholia.

4. Another common mistake is to think of the acute cases as more frequent than they really are. Of the 180 cases above noted only 16 approached the typical acute mania or melancholia, while 17 more had a distant claim to the name. By no means could we always have a case of raving mania in the house to show as an example.

5. That delusions are needful to prove insanity is a still common mistake, though growing less so. Of course the word *delusion* may have its meaning so stretched as to cover any inaccurate thinking, but we use it here in its ordinary meaning. If we had to dismiss cases in which we could not prove a well-defined delusion, we should dismiss a good many. Many imbeciles show mental weakness with no distinct delusion. More commonly this is found true in cases of epilepsy. The most interesting cases, however, are those of a mania which gets as far as the exaltation stage, but stops or lingers short of the stage of delusions. Occasionally some circular cases have shown this clearly, and the sparkle of the play of ideas has been remarkably above their normal. It likens most closely to the tipsy state of some inebriates. It usually, however, has not so much of silliness. Several times we have found it difficult to convince friends of such insanity. Of course, to friends or to a court one little delusion is worth a whole field of weakness.

6. Another common misconception, and one peculiarly for medical notice, is, that insanity is separated from sanity by a distinct line; that when we have a difficult decision, the difficulty is all in finding the symptoms, and none of it in placing the line. People at times deny such belief theoretically, yet use it practically. I once told a well-known judge, in conversation, that there were all degrees of insanity and responsibility, and he quietly replied to the effect that we all supposed so. However, I imagine he would not place that in a printed decision.

Definitions of insanity are notoriously inadequate. Disregarding all confusing words, it seems accurate enough to say that it is "an abnormal action of the mind, due to a disordered physical condition of the brain." It is technically a physical or brain disease. But the brain

is shut up in a bony box, and even if it were not inaccessible, its lesions are microscopical or ultra-microscopical. In our helplessness it has become customary to disregard the brain lesion, and settle down to terms of mind-action.

But to say that a man is insane, is to say, with regard to his mental state, about what would be equivalent to saying he was sick with regard to his physical state. A man who is sick, technically, may have only a slight and transitory headache, or a neuralgic pain, or (of chronic character) he may have hard arteries, or an impaired heart-valve. We can readily imagine an expert going on the stand and declaring such a man as sick, and then another one following and calling him not sick. Each would be right. The first, because any derangement is sickness; the second, because ordinarily the word sick is applied only after some incapacity has appeared. A dividing or defining line must be placed.

Just so with insanity. The patient studied may have only a hysteria, or the delirium of fever, or be under the influence of alcohol, or be in delirium tremens. He is surely insane. So also, he is surely sane. The contradiction is only apparent. It is at once seen that, as a matter of custom, people have usually applied the name *insane* only if the condition be of somewhat permanent nature. This is a useful custom. Or, again, take cases of chronic nature. A certain case is extremely odd, or eccentric; another is in the beginning stage of senility, as above outlined; another is mildly feeble-minded; another is in the early stages of epilepsy. Another custom appears in these cases, and that is, that the name *insanity* is applied only where there is a considerable degree of impairment. There need be no actual fogginess of thought in an indecision about any such cases.

To state it otherwise: I have been accustomed to say that the imaginary fence between sanity and insanity is a movable fence. In each case, the examiner places the fence, as well as studies the symptoms of the patient. We instinctively place the fence way beyond the slighter impairments, especially the imperfections, because of the half intuitive feeling that imperfections are frequent and imperfect humanity must be guarded. There is, of course, much sensitiveness about discussing this subject, much of which I think unnecessary.

7. Another mistake is to think of the insanities as entities. By this I mean the thinking of them as separated radically, as are typhoid fever and rheumatism. They are not, for the elements

of any one can be found in almost any other. It is true that general paresis has fairly good boundaries, but no others come very near it.

8. Along this same line we meet the idea that defectiveness is not insanity. It would seem almost sufficient to state that, just as clubfoot, harelip and squint are included among medical and surgical diseases, so an imbecility is an insanity. All grades of imbecility exist, and probably every reader can think of some one in his community "a little light," yet never called insane. There is apt to be some progressiveness in these cases, and especially if epileptic. In such we at some time reach a line where we apply the name.

9. It seems generally assumed that there are no fatal results in insanity. This needs large qualifications. In the last 147 deaths, I find that general paresis caused 25 of the deaths, and it seems as truly a cause as pulmonary tuberculosis. The seniles are many of them also rapidly progressive cases, and senility is a true cause of death, even though a special proximate cause is selected. But there is a very direct cause of death in what is usually called acute delirium. Of the above 147 cases, 9 died of this cause. Peculiarly, 8 of them were in the last eleven months, and only one in the preceding sixteen months. Epilepsy also causes death at times.

10. It is a common, almost general, assumption that in this state a very large proportion are from the foreign-born. The census of 1900 shows that about 28.8 per cent of the population of Minnesota was foreign-born. The hospital reports of the next two years show that about 56 per cent of the admissions were foreign-born. This seems conclusive, but care is needed in using statistics. The caution here needed is on account of the fact that insanity is almost wholly a disease of adult life, and the farther fact that few except adults emigrate to this state. This becomes more clear when we find that in 1900 there were in Minnesota about 882,500 native-born persons under the age of 25, while there were only about 86,400 of foreign-born of the same ages. This tremendous difference carries its contrast into the adult class. Of those over the age of 25, there were 360,700 of native-born, and about 418,300 of foreign-born, actually more foreign-born than native-born. Of those over the age of 25 there are 53.7 per cent foreign-born, from which to get the 56 per cent of foreign-born commitments. Of course, some are committed before the age of 25, changing this slightly.

11. Concerning heredity, we note two forms of thinking, which are in our opinion erroneous.

1. That we inherit a disease. Three years ago, in stating my belief in heredity in disease, in spite of considerable detail of explanation, I met prompt denial, especially with regard to tuberculosis. It was an infection. Many times since I have seen in print the straw man, heredity (in tuberculosis), set up, and promptly knocked down as out of date. The distinction between heredity as determining the disease and the inheriting of the disease direct, seems rarely noted; yet, as I understand it, even before germs were known, direct inheritance of the disease was not much argued. Now, insanity is also a physical disease. In insanity we do not inherit a disease, but we inherit a constitution, an anatomical make-up which unfolds in certain directions with varying strength or weakness. Improbability fades away when we reflect that we inherit in the same way our temper or mildness, our brightness or our dullness, our facial formation, our peculiarities of mind or manner. Indeed, logically, the wonder is not in what we inherit, but in any variations; and it seems possible that even our variations from type are inherited also. At the very least,

in this debatable question, we cannot inherit comparative strength against disease without inheriting comparative weakness toward disease, and such weakness toward a special disease seems at times very clear.

2. Heredity is not all in tables. We ordinarily, in our tables, place all cases in which a father or mother, a grandfather or grandmother, or an uncle, aunt, or cousin, has been insane. Such a table would probably give us 25 per cent of cases showing heredity, with only what facts the examiner has known or ventured to put down. But what should we say of the case in which the mother was feeble of mind or eccentric, but not committed, and the son, a little more so, is committed? Or the reverse case, in which the mother is committed and the son not? Or the case in which the parents having a tendency to insanity, die too young to have developed it? How about the children born of inebriate or enfeebled conditions? Other combinations can be seen. It is often easy to note tendencies in others of the family like those which have committed the one. I have been inclined some times to about double the ordinary figures showing heredity.

X-RAY THERAPY*

BY W. P. ROBERTS, M. D.

SIOUX FALLS, S. D.

Early in 1895, after Prof. William Roentgen had announced his wonderful discovery of the *x*-ray to the Physical Medical Society of Wurzburg, in the December previous, hundreds of investigators began experimenting with this agent, and it was not long before it was discovered that it had a beneficial effect on diseased tissue, and most notably on lupus. After its discovery as a therapeutic agent, it was but a short time before the *x*-ray was used thus on almost all conceivable forms of diseased tissue, and, considering the faulty apparatus and technic of that time, the results were wonderful.

In presenting a paper on this subject, I do not wish my enthusiasm to be construed as advocating this excellent agent as a cure-all, nor do I wish to dispose of any other valuable remedy which may be used with equally good results for

various conditions. My practice is far from this, but in well-selected cases it is undoubtedly the best and most effective remedy at our command when properly used.

Before discussing the therapy of the *x*-ray it is appropriate to consider its *modus operandi*. It has been claimed that the therapeutic use of this agent is entirely empirical and not founded upon any physiological basis. Its effect is as easily explained and as dependable as that of any medicinal substance in the United States pharmacopoeia.

It is now an universally accepted theory that the actinic property of the *x*-ray is its only property which has therapeutic effect, differing only in degree from the actinic property of the Finsen light and ordinary white light. In this way only can the therapeutic effect of the *x*-ray be explained, and the result produced by its use bears witness to the conclusion. The *x*-rays have three effects on tissue: First, that of a stimulant, thus

*Read before the South Dakota State Medical Association, May 29 and 30, 1907.

increasing metabolism and nutrition. The second effect is that of causing destruction or necrosis, which, I believe, is the same in healthy tissue as in diseased tissue, and the only reason a lesser quantity is required to effect some forms of diseased tissue is that the diseased tissue has less power of resistance than normal tissue, acting in this way similar to the old method of using arsenical paste for the destruction of epithelioma. The third effect is that of atrophy. The stimulating effect, if long continued, without causing necrosis, will result in atrophy.

These three effects, operating singly or in combination, will explain all the therapeutic action of the x -rays, and when these effects are borne in mind, it should not be difficult to determine the therapeutic application.

Experiments with the x -rays on bacteria in cultures, prove that it has no marked bactericidal powers when bacteria are growing in ordinary culture material, but with most varieties of bacteria, growing in living tissue, they are promptly killed or greatly inhibited in their growth. The only rational explanation of this anomaly is, not that the rays have a bactericidal action *per se*, but that the effect of the rays on living tissue, increases its resistance to the effect of bacteria, and thus causes their destruction.

The anodyne and antipruritic effect of the Roentgen rays, is explained by the supposition that some nutritional change is produced in the nerve fibres. This conclusion is arrived at because of the long-continued relief, or even cure, of pruritus and deep-seated neuralgia.

Certain precautions should be taken when using this agent. It should be labelled "poison; handle with care." No more of the patient's body should be exposed to the influence of the x -rays than necessary. There can be no questioning of the assertion that it has some profound deleterious effect on the system when frequently applied over large areas of skin surface. This has been numerously demonstrated in the cases of x -ray operators who have died from the effect of constant exposures, even much less in degree than patients receive. Operators should wear an x -ray-proof gown and gloves.

There are several practical points with regard to the quality and quantity of x -rays which should be considered. First, as regard quality: the temper of the tube should be graded to the work being done. When a superficial lesion, such as acne, is to be treated, the softest tube obtainable will give the best results. Where the

lesion is deeper, as in tubercular adenitis, a medium tube should be used, and in deep lesions, such as pulmonary tuberculosis or tubercular peritonitis, the hard tubes are to be preferred.

Other factors affecting the quality of the rays, are, in the coil outfits, the strength of primary current, size of coil, and rapidity of interruptions. In the static outfit the quality is influenced by the number and size of the plates on the machine, and their speed when in operation.

As to the quantity, which is measured by the length of exposure and the distance of the patient from the tube, I should say, give enough to produce a re-action on healthy tissue. In but rare instances is it advisable to go beyond this point. Necrosis is a result very unfortunate to the patient, as well as to the operator.

Auxiliary treatment in the way of improving the general health, such as combating anemia, constipation, auto-intoxication, etc., with various appropriate remedies, should be given. Locally, I never use anything in addition to the x -rays, except in ulcers, when some mild surgical dressing, such as boric acid solution, or some mildly antiseptic dusting powder, will be found desirable.

I will not go into the technic of the use of the x -rays, because every operator has his own technic, and no rules can be laid down. It is mostly a matter of judgment in every case, and any rule followed would lead to disaster, sooner or later. It is always advisable, however, to go slowly at first in the treatment of any case, on account of the occasional patient who is very susceptible to the x -ray influences, and any rushing of the treatment in these cases would bring censure upon the physician and undeserved ill-repute to the therapeutics of the x -rays.

I shall not expect all of you to agree with the following classification of the indications for the therapeutic use of the x -rays.

First, I will mention a list of diseases for which other methods of treatment, as a rule, have proven unsatisfactory, and for which the treatment with the x -rays has been so gratifying that it might be said the use of any other remedy was unjustifiable. The most notable are acne, acne rosacea, lupus vulgaris, lupus erythematosus, keloids, tubercular ulcers, scrofuloderma, leukemia, pseudoleukemia, hyperhidrosis, seborrhea, chronic eczema, hairy pigmented nevi, and chronic pruritus, affecting any part, especially the anus and vulva.

Second. Those disease of the skin which can be successfully treated by other methods, but

which, for some reason, such as avoiding pain, or a local or general anesthetic, the x -ray is preferable. These are cutaneous carcinoma, tubercular lymph-glands, keratosis senilis, and verruca senilis and plana.

Third. In a number of diseases where other remedies are frequently and usually successful, but for some reason have not been cured. Among these we may mention clavus, trachoma, vernal conjunctivitis, unsightly scars, exophthalmic goitre, neuralgia, old sinuses, chronic ulcers of non-specific origin.

Fourth. Post-operative treatment of malignant growths, with a view of destroying any malignant cells not removed by operation.

Fifth. Use of the x -rays on inoperable malignant growths, with a possibility of favorably affecting the growth, either by causing their disappearance, or by causing such improvement that operation becomes feasible, or even when no effect is had in diminishing the growth, the relief from pain is often remarkable, and the decrease in the offensive odor from ulcerating malignant growths, which follows x -ray exposures, is sufficient warranty for the application.

DISCUSSION

DR. E. KLAIVENESS (Sioux Falls): Some time ago Dr. Roberts presented this paper to the Seventh District Medical Society, and at that time I argued that the therapeutics of the present day consists of too many mechanical appliances, and that the instrument-makers are prescribing for the doctors.

I realize that when a doctor has gone to the extent of investing in an x -ray machine he naturally feels disposed towards applying this remedy to as many diseases as possible in order to obtain some financial returns. The group of diseases that have most frequently been submitted to this treatment are skin diseases.

I have nothing against the x -ray machine as a means of ascertaining a surgical diagnosis nor as a therapeutic agent in certain well-defined diseases when administered by a skillful operator, such as our colleague, Dr. Roberts; but for the country physician in a small town, I am certain that an investment in an x -ray machine will bring disappointment, because a man does not become a specialist in skin diseases from the mere fact that he possesses an x -ray machine, nor does he get experience enough from the limited clientele at his disposal to make him an expert in the dosage, time of exposure, etc., with this remedy.

I shall not in detail enter upon a discussion of the pros and cons for the application of the x -rays in skin diseases. Suffice it to say that it has been made use of with more or less success in parasitic bacillary diseases, from lupus vulgaris and herpes tonsurans, down to the common acne faciei. I feel confident, however, that within a short time some of these diseases will be withdrawn from the x -ray therapist, because the last four or five years of advance in medicine have opened up a much more scientific and therapeutic method in the administration of the opsonic treatment.

DR. E. T. RAMSEY (Clark): I saw a case of cancer of the cervix operated on by a leading surgeon some four years ago, the patient being the wife of a leading practitioner in a neighboring town. The prognosis was very unfavorable. In a short time the trouble began to return, and on the advice of the surgeon who had performed the operation, the other decided to try x -ray treatments, which have apparently corrected the trouble, as there has been no recurrence at this time. The diagnosis could not have been mistaken, as a microscopical examination was made of the tissues removed.

DR. J. J. DEERTZ (Northville): I have had some experience with the x -ray, but it is so limited that I am hardly able to add anything to Dr. Roberts' paper. The only thing I have used the x -rays for is skin diseases. In certain forms of eczema, especially what is sometimes termed cold-weather eczema, I find that after two or three applications of the rays the trouble disappears entirely. I also find the rays a great aid in diagnosing fractures. That is about all I can say about the x -rays, not having had anything to do with them for several years.

DR. D. W. CRAIG (Sioux Falls): I would like to add just a few words to Dr. Roberts' paper. He neglected to give the results of his treatment, and being associated with him for the last twelve months, I would like to commend the manner in which he has handled his cases, and I can say that results have been very satisfactory.

The remark of Dr. Klaveness, that x -ray machines are made use of principally by charlatans, etc., compels me to say that it would be impossible for a doctor to use the x -ray machine in any more ethical manner than Dr. Roberts has used his.

DR. ROBERTS (Essayist): I wish to thank Dr. Craig for his kind indorsement of my ethical use of the x -ray, as I have not used it as a quack remedy in any case. I had a woman referred to me a short time ago by a physician who has used the x -ray rather indiscriminately. This woman had a tumor in her breast and was very anxious to know if it was a cancer, supposing that if it were a cancer, the x -ray would show it to be such. Of course, you can see nothing diagnostic, and I refused to examine her.

In regard to the treatment of certain skin diseases, especially acne, Dr. Klaveness refers to the opsonic index, and apparently is willing to accept this new method with the doubtful indorsement of one year of trial, and wants to reject the x -ray as a useful therapeutic agent after eight or more years of proven usefulness.

The fact that numerous remedies are doubtfully recommended for certain skin diseases, is proof that we have no specific for these diseases. With the use of the x -ray I have been getting better results in the treatment of acne, chronic eczema, and lupus than I ever did with any medicinal substance.

I have never used the x -ray for tuberculosis of the lungs. However, if some method could be devised to prevent burning the skin it undoubtedly would be a great remedy.

Malignant growths have been favorably influenced by the use of the x -rays, but I would not advise their use, except for early stages of superficial malignant growths and cases that have passed the operable stage. In these cases the use of the x -rays is fully justified, not only because of the cure sometimes effected, but because of the relief of pain and the correction of the offensive odor.

SYPHILITIC STIMULATION OF MALIGNANCY*

By J. CLARK STEWART, M. D.

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MINNEAPOLIS

To illustrate what I wish to bring out under this title I can best begin by detailing two interesting cases which have come under my observation during the past year which are beautiful examples of two phases of my subject.

Case 1.—The first case was a remarkable simulation of sarcoma by late syphilis. A married woman, aged 29, came to me for an ulcerating tumor in her axilla, which she had noticed only for three months, during which time it had grown rapidly. She had suffered no pain until the last month when an ulceration began in the axillary skin and caused some soreness. This ulceration showed no tendency to heal, but gradually grew larger and deeper with a disagreeable discharge, increasing in amount. Her previous health had always been good. She had been married three years and had borne one healthy child and had one miscarriage from accidental causes.

On examination a large tumor was found extending from the base of the axilla, where there was an unhealthy ulceration under the pectoral muscles, into the neck, where it blended with a mass of enlarged lymph-nodes as large as an orange. The supraclavicular mass was immovably attached to the clavicle, and the skin over the whole tumor was slightly reddened and traversed with the dilated veins so characteristic of sarcoma. Nothing abnormal was discovered in other regions.

The only probable diagnosis was sarcoma, as every appearance was typical of a most malignant specimen of this class. Our honored president, Dr. Moore, saw the case with me and agreed as to the probable diagnosis and also as to the propriety of putting the patient upon large doses of potassium iodide. It is only fair to say that we also agreed that there seemed little probability of her being helped by any treatment, as there was no possibility of surgical interference. She was put upon potassium iodide, gr. xx, t.i.d., with instructions to increase rapidly. After two weeks' treatment, during which she had reached gr. 35, t.i.d., there was barely perceptible improvement, but encouragement was afforded by the fact that the tumor mass had not increased in size. Two weeks more, with in-

crease of the iodide to gr. 60, t.i.d., caused marked shrinkage in the tumor with improvement in the ulcer, and now, after some three months' treatment with potassium iodide alone, the tumor has nearly disappeared, and the supraclavicular mass is reduced to merely a group of separable, slightly-enlarged lymph-nodes. Treatment will, of course, be continued.

This was the most perfect simulation of sarcoma I have ever seen; and, certainly, if a bad prognosis was ever warrantable on account of the appearance of malignancy, it was in this case.

A similar case is cited by Dr. Ware in the January number of *Surgery, Gynecology and Obstetrics*, where a massive gumma of the ulnar periosteum in a child aged 8 years, was operated upon in a New York hospital as sarcoma. The operation was fortunately abandoned, and the microscope and the therapeutic test proved the case syphilitic.

Case 2.—The second case illustrates an entirely different phase of our subject, the simulation of epithelioma by syphilides of the mucous membranes. A perfectly healthy farmer's wife of 65 was referred to me for a growth on the tip of her tongue, which had been present for some six months, and was painful and caused much salivation. There was no antecedent history of importance, except that just before she first noticed the trouble on her tongue she had a sore throat, about which she remembered little.

On examination, the throat showed nothing, but on the right side of the tip of the tongue there were grouped four small ulcerated nodules with marked underlying induration. There was no enlargement of the lymph-nodes, and no other facts of interest could be discovered. This case very closely resembled in appearance a case of epithelioma similarly located, upon which I operated for Dr. S. Marx White where the diagnosis was made by the microscope, both before and after excision. I had little hesitation in diagnosing epithelioma in this case. Dr. White was fortunately on hand and kindly confirmed the diagnosis, remarking upon its resemblance to the former case. Again, I said, "I am going to give this patient the benefit of a course of potassium iodide before operating upon her tongue, but I fear it will do no good." Dr. White approved, while joining me in the improbability of there

*Read before the Hennepin County Medical Association, January 20, 1908.

being a specific lesion. She was put upon potassium iodide, and in one month she returned with a perfectly smooth tongue.

I do not care to dwell upon rank errors of diagnosis, such as mistaking the initial chancre when located upon the lip for epithelioma, two cases of which I have known to be operated upon in Minneapolis, or the more justifiable one of mistaking a gumma of the mucocutaneous border of the lip for epithelioma, but only such simulation of malignancy as will lead competent men, familiar with the clinical appearances of syphilis, to discredit the specific character of the lesions. The two cases cited are certainly good examples of this, illustrating the two most common types of such simulation, the first case, a massive gumma resembling sarcoma, and the second an earlier lesion, either the so-called tubercular syphilide or an early gumma giving a very perfect picture of superficial papillary epithelioma.

Considering the great and increasing prevalence of syphilis, it is amazing that the profession at large so commonly fail to recognize it except in its early stages, and so constantly confuse it with tuberculosis and other diseases.

While not strictly a part of my subject, I cannot pass over the frequency with which local syphilitic lesions are diagnosed and treated as tubercular. Within the past few years I have been interested in the number of so-called lupus cases sent me for treatment by the x-ray, which were either clearly syphilitic or were proved so to be by the therapeutic test.

One case of supposed lupus of the throat which got well promptly upon potassium iodide had a brother who had been treated for two years by a firm of great surgeons without cure, and after his brother's convalescence I was pleased to hear that he too had "tried the medicine" and gotten well. A recent case in point was a young man whom a prominent Minneapolis physician treated for syphilis about nine months ago and then when confronted with a small lymphatic mass on one side of the neck diagnosed tuberculosis and advised the young man to "live out doors." Six weeks of potassium iodide, up to gr. 60, t.i.d., caused the disappearance of the mass.

My confreres on the seventh floor of the Pillsbury building will all remember two lamentable illustrations of the non-diagnosis of syphilis in the persons of two fine-looking children with gummatous lesions, causing destruction of hard and soft palates. Such cases could be multiplied

ad libitum where clear evidences of syphilis have been disregarded or diagnosed as tubercular with disastrous results.

The microscopic diagnosis of specific lesion is regularly difficult, and sometimes impossible, as sarcoma, tuberculosis, and other chronic inflammatory lesions may closely resemble those of syphilis, so that error can be avoided only by thorough conversance with the clinical manifestations of syphilis and the use of the therapeutic test when in doubt.

The only purpose of this paper is to bring out the fact that syphilis can simulate malignancy so closely that the most competent men will often err in diagnosis and perform unnecessary operations unless the check of the therapeutic test is employed in all doubtful cases. This does not mean that malignancy cannot, or should not, be diagnosed and treated without recourse to a therapeutic test, as most cases of malignancy are unfortunately too easily diagnosed. The time wasted by taking an agnostic position toward malignancy would often preclude any hope of success in its operative treatment, so that the indications for the use of the iodide can not be too clearly limited.

Superficial lesions of the mucous membranes apparently epitheliomatous are usually of rather slow growth, and the delay of a few weeks time, necessary to exclude syphilis in these cases, is, I think, warranted by the difficulty of diagnosis, while in massive sarcoma operation is so seldom, if ever, of avail, and the only alternative, the injection of the Coley toxins, can well wait. Operable carcinoma, excluding the epitheliomata, are, I think, never confounded with syphilis, so that here no therapeutic test is justifiable.

We are learning very slowly that our progress in the cure of malignancy must lie in the education of the profession and the laity along the line that the early removal of all growing tumors as soon as discovered, especially in subjects over thirty, is the only way that malignant tumors can be diagnosed sufficiently early to ensure uniformly good results. When the public understand that early operations properly performed can cure cancer, and that all tumors occurring after the thirtieth year are very probably carcinoma, our percentages of non-recurrence after operations will be noticeably increased.

Until that happy day let us rejoice when, in the presence of clinical malignancy, recourse to the iodide proves us mistaken and cures one patient.

TECHNIC OF THE INTRANASAL METHOD OF OPERATING FOR CHRONIC EMPYEMA OF THE MAXILLARY SINUS*

By WILLIAM R. MURRAY, M. D.

MINNEAPOLIS

A year ago, in a paper on the operative treatment of chronic empyema of the antrum, I called attention to the advantages of the intranasal method of operating by the removal of a portion of the nasal wall of the antrum through the inferior meatus, and advocated this method of operating in chronic suppurations of this cavity, and stated that, in the great majority of all cases of chronic empyema of the antrum, the operation through the nasal wall would be indicated, and that it was the operation par excellence in this class of cases. I also stated that the more radical operation of Caldwell-Luc, or of Denker, while far too radical and unnecessary in the vast majority of these cases, will still be indicated in a small proportion of cases, such as those attended by the presence of neoplasms, bone necrosis, fistula, etc.

A further experience during the past year of a considerable number of cases leads me to present this subject again, in a brief paper, confining my remarks to the technic of this method of operating.

By chronic cases I refer to those cases of six months' or more duration, or of shorter duration if they have resisted such therapeutic measures as removal of such intranasal conditions as interfere with drainage through the ostium maxillare and the proper irrigation and medication of the antral cavity.

As the establishment of free drainage is the essential condition to be obtained in all empyemas of the nasal sinuses, it is hardly necessary to state that any obstructions present in the region of the natural opening to the antrum, such as polypi, hypertrophied middle turbinate, etc., should be removed. It is also hardly necessary to add that should a diseased tooth root be present and be a source of irritation within the antrum it should be removed.

In chronic cases the enlargement of the ostium maxillare, or the removal of a portion of the nasal wall of the sinus high up near the roof of the cavity, has not been satisfactory in my experience, and I believe it is the consensus of opinion among operators that such methods of operating are ineffectual in cases of long standing.

This is not surprising when we consider the anatomical formation of this sinus, and that an opening high up in the middle meatus drains the antrum from its upper portion, and in addition to its not affording the most favorable drainage and so allowing the cavity to empty itself completely and continuously, it does not permit of thorough aeration of the antrum, a factor which is of great importance in establishing a cure. By making a large and permanent opening into the antrum, through the inferior meatus, and by removing a portion of the nasal wall down to a level with the floor of the nostril, we are able to drain the cavity from a more dependent portion; we can determine the condition of the lining membrane and contents of the sinus, and curette the same if advisable; we can more easily apply such medication, as is indicated, directly to the walls of the sinus; the patient can easily irrigate the cavity by means of a bent cannula, and the location of the opening, in the lower part of the nasal wall of the sinus, allows the entrance of air and the thorough ventilation of the sinus.

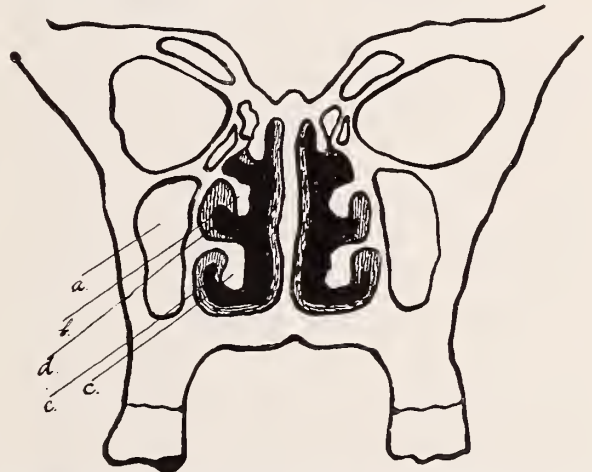


Fig. 1.—Skelated drawing showing the relation of the maxillary sinus; b, to the nasal fossa; a, maxillary sinus; b, middle turbinate; c, inferior turbinate; d, middle meatus; e, inferior meatus.

Preparation of the Patient.—The patient should be prepared for operation both generally and locally, the nasal tissues being shrunk with adrenalin and thoroughly cleansed with normal salt solution.

Anesthesia.—If local anesthesia is used the application of a ten-per-cent solution of cocaine may be made, by means of cotton pledgets, in

*Read before the Hennepin County Medical Society, October 7, 1907.

the inferior meatus, between the inferior turbinate and the nasal wall, and also in the middle meatus, at the upper attachment of the inferior turbinate, and the anterior two-thirds of the inferior turbinate should be rendered anesthetic in the same manner. The parts should first be thoroughly shrunk by the application of adrenalin chloride, 1-1,000.

After the removal of the anterior portion of the inferior turbinate cocaine should again be applied over the wall of the sinus, or a small amount of a one-half of one-per-cent solution of cocaine, in a 1-5,000 solution of adrenalin may be injected with a hypodermic syringe. If general anesthesia be used the patient's head should be placed in such a position that blood and pus will not be drawn into the larynx.

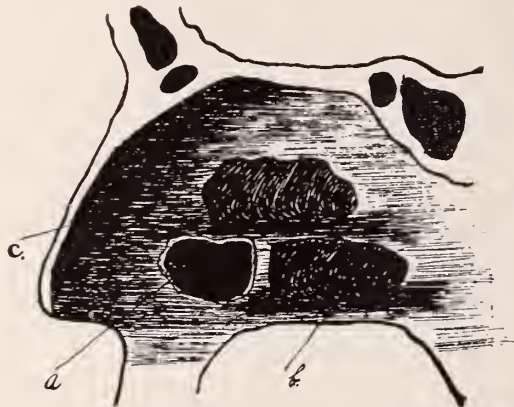


Fig. 2—*a*, opening into antrum through the nasal wall; *b*, inferior turbinate bone (anterior part removed); *c*, middle turbinate bone.

Removal of the Anterior Portion of the Inferior Turbinate.—The anterior half of the inferior turbinate can be easily and quickly removed by passing the blades of a pair of turbinate scissors above and below the attachment of the turbinate to the outer wall of the nostril and pressing the blades of the scissors close against the nasal wall and cutting backwards the required distance. In this way the bone is easily severed at its attachment, the detached portion pushed inwards towards the septum, and the loop of the snare passed over it and drawn through. The anterior turbinectomy may be done either as a preliminary operation to entering the sinus, or both may be done under one anesthesia. I prefer the latter, as the removal of the turbinate requires but a few minutes of time and is not painful.

Perforation of the Antral Wall.—The instrument which I have found the most serviceable and the simplest, in the average case, for making the initial opening through the bony wall of

the antrum, is the hand or electric trephine, the shank of which must be pressed sharply over against the end of the septum, in order to obtain the proper angle for entering the cavity. The calibre of the trephine should be at least six m.m. in diameter in order to make an opening large enough to readily admit the blade of the biting forceps, or whatever instrument may be used to enlarge the opening to the desired extent. The opening with the trephine should be made well back towards the severed end of the turbinate, as by so doing the operator will avoid any danger of going through the nasal wall too far anteriorly and entering the soft tissues of the cheek. The backward-cutting bone-forceps are then used to make a large and permanent opening in the bone, care being taken that the bony ledge be removed well down to the floor of the nostril, and that the opening be made sufficiently large to prevent its subsequent closure. A very useful instrument, for quickly enlarging the opening, is a right-angled curette recently devised by Dr. R. C. Myles. The instrument has multiple cutting edges on both upper and lower surfaces, and quickly enlarges the opening above and below to the desired extent. I have been using this curette for the past few months and have found it a very satisfactory instrument.

The antrum should then be irrigated with a warm saline solution, and an examination of the sinus can be made by means of the probe, and, in the case of a large roomy nostril, by inspection with the use of a small nasal-mirror. The cavity can be curetted, provided such a procedure should be indicated. The sinus should then be packed with a narrow strip of gauze, which can be removed at the end of twenty-four or forty-eight hours, and, as a general rule, the packing should not be renewed after the first dressing.

After-treatment.—The character and duration of the after-treatment will depend upon the indications present in each individual case. As a rule the patient should be seen daily by the surgeon for a period of a week or ten days, and the cavity should be thoroughly cleansed with a normal salt solution or a boric-acid solution followed by the application, directly to the walls of the sinus, of a twenty-five-per-cent solution of argyrol, or whatever other form of medication may be indicated. The argyrol solution can best be applied by the use of an atomizer, spraying the solution directly into the sinus. The application of such antiseptic and stimulating remedies as silver nitrate, in appropriate strength, will sometimes be indicated. If advisable, the patient

can easily keep the cavity cleansed by daily irrigations with a mild antiseptic solution, the irrigations being carried out by means of a fountain-syringe and a large-sized Eustachian catheter.

The operation through the nasal wall of the antrum is not a radical operation, at least it is

not radical as compared with the older operation of Caldwell-Luc; it is perfectly satisfactory in a very large proportion of cases of chronic empyema of the antrum; it can be done under local anesthesia; and the patient quickly recovers from the effects of the operation.

THE PHYSICIAN'S PROBLEM*

BY E. O. GIERE, M. D.

Surgeon to Ebenezer Hospital

MADISON, MINN.

This is an age of progress in all activities of life, and under such prevailing circumstances it is saying a great deal when we assert that, of all the various branches of learning, that of science has made the greatest strides, and, of the different branches of science, that of medicine and surgery has, during the past quarter of a century, made the greatest progress. This is a broad statement, but it is nevertheless true.

Let us examine our medical colleges of to-day. Notice the high requirements for admission; observe the well-equipped chemical, physical, physiological, anatomical, biological, and pathological laboratories; see the thoroughly qualified corps of lecturers and demonstrators; review the modern scientific text-books and splendid reference libraries at the disposal of students and teachers; behold the vast amount of clinical material afforded them, and mark the thorough instruction and drilling the students are subjected to. Having completed a four-year's course of at least eight months each at a first-class medical school, such as I have described, the young graduate appears before a state board of medical examiners where he passes a broad and rigid examination. Having, perhaps, still further improved himself by a year's internship in a modern and well-regulated hospital, and, finally, perchance, having returned from a trip abroad where he has received his finishing touches, he ventures forth into the active arena of life to take up the work before him. He establishes himself in a manner befitting the twentieth century physician; modern office rooms, equipped with various up-to-date instru-

ments and appliances, from the well-known Fahrenheit's fever-thermometer to the modern Roentgen x -ray coil; in fact, a complete array of equipments by which to scientifically arrive at the correct diagnosis of any condition deviating from the ordinary standard of health. He is, furthermore, well armed with all modern necessities and conveniences for treating diseases, as standardized drugs and pharmaceuticals, electric batteries and machines, surgical instruments and appliances, watering-places, gymnasiums, hospitals and sanatoriums, etc.; in short, every form of appliances and institutions, which our modern times demand for the treatment of disease.

When a physician so qualified and so equipped goes out to battle against disease, the world naturally expects great results and wonderful achievements, and, as a matter of fact, it need not be disappointed. When the patient has been subjected to a complete physical examination by these various modern means, the cause and nature of the disease—if it is physical—will have been learned. Pathologic physiology is soon corrected by one or another of our modern therapeutic agents. The patient burning with fever is rendered cool and calm; the invalid laboring under the dark and heavy cloud of autointoxication is soon made light and cheerful as the unnatural condition of the alimentary tract is corrected; the little child in the throes of that once so much dreaded disease, diphtheria, is resting easy on the way to recovery a few hours after the administration of antitoxin.

Pathologic anatomy is equally successfully dealt with under modern methods. Calmly and peacefully the patient goes to sleep by the inhalation of the vapor of ether or chloroform, and

*President's Address, read before the Camp Release Medical Society, at Renville, July 25, 1907.

while he is sweetly dreaming, entirely oblivious to all his surroundings, the modern surgeon, under the blessed rules of asepsis, proceeds to enucleate an abdominal tumor, perhaps necessitating the complete removal of the woman's internal genital organs. While the disease threatened to render the sufferer's life extinct in a few days or weeks, she is now, after the completion of the operation, returned to bed with pulse and temperature near the normal, and being none the worse for wear. On the seventh day the skin sutures are removed, on the twelfth day the patient is up, while on the fourteenth to the twenty-first day she returns to her home with a new lease of life. Truly, the achievements of the present-day physician and surgeon command the respect of the world, and the world of science may well envy the splendid strides which the science of medicine and surgery has made, and is still making toward the goal, perfection.

But we have so far surveyed the bright side of our profession. We are, after all, simply progressing, and nothing more. In our march of progress we discern many imperfections in our science, and we allow many things to fall by the wayside which we ought to take up and make our own. We are proud, and justly so, of what we have achieved, but we have reason to feel deeply humiliated at what we have failed to accomplish. In fact, we are far from having solved the physician's problem—the goal of perfection is far distant and not yet in sight.

Recall to your minds the number of hysterical and neurasthenic patients who infest your offices and who are made no better by their frequent visits. Think of the many sufferers who, having received treatment at your hands for a long time and without relief, have sought the care of quacks and charlatans, often with benefit and cure to themselves.

Look at the thousands of our patients who have turned from us in disappointment and disgust, and have swelled the ranks of the various faith-healing cults and institutions. Consider the thousands now inhabiting asylums for the insane, and seriously ask yourself if a large number of these might not to-day be enjoying health and happiness and the rights of free citizenship, if you and I and the profession as a whole, had solved a phase of the physician's problem which we have so far almost entirely ignored.

Why is it that we have accomplished so much in certain lines and so little in others? Why is it that perfection seems almost in sight, on the one hand, while, on the other hand, we have

hardly commenced to march toward it? Why is it that we can so often bring health and happiness to patients who come to us with physical ailments, while, with hands down, we stand helpless when the greatest of all sufferers, the mentally afflicted, seek our aid?

The answer is easy and not far to fetch. We base all our knowledge on the cell, and we study the cell to the exclusion of everything else. We insist on answering every question pertaining to our science by the study of the cell, and because of our very diligent and persistent study of the cell, from the way it appears in its crudest form under the microscope to its more wonderful and complex states in the higher organizations of life, we become thoroughly familiar with it, and with the laws governing it, until we have to-day almost achieved the mastery over it, which our modern treatment of physical disease so eloquently demonstrates. But because we seek an answer for every phenomenon of life through the study of that protoplasmic cell, and because we are not willing to believe or take for granted anything which the study of that cell cannot answer, therefore we fall so miserably short of solving the physician's problem.

The Bible, the oldest authoritative book extant, tells us that man consists of a body and a soul; psychology teaches us this, our poets sing the same story, and experience demonstrates it every day in our life. For why is it that, when that something which science will not recognize because it cannot be physically demonstrated and the microscope fails to reveal it—why is it that when this something wrests itself from the body, that then that part of man which has its development in the cell, returns to the dust from whence it came? Why is it that this physically undemonstrable something contains the life, which the physical organization of itself cannot produce or demonstrate? Is it not because it is a something distinctly apart from, and independent of, the protoplasmic cell? Is it not that something which is referred to in Genesis 11, 7: "And the Lord God formed man of the dust of the ground, and breathed into his nostrils the breath of life, and man became a living *soul*."

The sooner we adopt the view that man is a dual being, part physical and part psychical, the better it will be for mankind, the nearer will we come to solving our problem, and the greater will be the glory of our profession. It is as radically wrong to join Hobbes and Locke in their theory, that all is matter, as it is to adopt the philosophy of Berkely and Hume, that all is

spirit. A more practical truth is that contained in the words of Scripture, that matter and spirit both exist. We laugh at the Theosophists, Christian Scientists, and other cults, who found their doctrines on the theory that all is spirit and matter is naught, but we make ourselves equally ridiculous by going to the other extreme and thus professing that all is matter and spirit is naught. The fact is, matter and spirit both exist and both prevail, and the most reasonable view to adopt in the face of this is, that both of these enter into the composition of man.

Granting, then, that man is a dual being, consisting of a body and a soul, the one being of material origin and the other of psychical source, and taking it as truth that each of these parts may become subject to disease, the physician should be able to treat the infirmities of the one as well as those of the other. The function of the physician should be to prolong life, lessen suffering, and increase happiness, and allowing that man is a dual being, part physical and part psychical, how can the physician become successful in performing his function—and this is the physician's problem—if he diligently studies the one, but stupidly ignores the other? What benefits it man, as a dual being, that his physician dives into the depths of the mysteries governing the one part, but pays no attention to the study of the other? What profit is it to the psychically sick that his physician understands all about the body and its ailments, if he is ignorant of the laws governing the soul? What balm can a dose of medicine offer to a broken heart? But, on the other hand, what a healing power may not a few words of cheer, correctly spoken and uttered at the proper time, bring to soothe that troubled heart? What can an operation do for the relief of the individual who goes brooding over the thought that his soul is eternally lost? What physical means would you employ to cure yourself of the sorrow experienced by the loss of your child? These are simply manifestations of the psychical side of man, and of all the pangs and sufferings of man the hardest and most unbearable are those of psychical origin, and we meet with these manifestations nearly every day in our practice. Then why should we not perfect ourselves in the treatment of these?

The ideal physician should be a theologian, a psychologist, a philosopher, and a scientist. As such, he would be able to diagnose any disease, first of all whether it was physical or psychical, and, having made the diagnosis, he would be prepared to institute proper treatment, which would

be physical, if the disease were physical, but psychical if the disease were psychical.

Had the mental factor in medicine been given more attention in the past, more health and happiness would have prevailed, and quackery and charlatanism would not have flourished as they have done, and as they are doing to-day. Indeed, this potent agent of psychotherapy, which we have so entirely neglected, is the very foundation upon which the quacks have built their fortunes. And is it not strange that during this twentieth century when we have achieved such wonderful results in medicine and surgery—such as the world has never witnessed before—that, in spite of this, quackery flourishes more astonishingly to-day than it ever did in the past, even in the darkest ages? Would it do so if the regular profession of medicine recognized the duality of man?

The study of medicine was born in ignorance and superstition, and when it had extricated itself from this, it swung to the other extreme of taking nothing for granted, but denying everything which could not be seen, or proved to the physical senses. By and by it will strike its equilibrium, when it will recognize the truth that matter and spirit both exist; when it will admit the fact that man is a dual being, physical and psychical, and then it will enter upon a new epoch, when its achievements will be still greater and its conquests far more vast and more important. When the physician shall have attained that stage of development when he can truly perform his function of prolonging life, lessening suffering, and increasing happiness, physically and psychically, then he shall have solved the physician's problem—and then he shall have disarmed the faith-healers, the quacks, and the charlatans of all descriptions.

But if we shall ever hope to attain to this state we must not consider man simply as a machine and that nothing enters into his composition which the microscope fails to reveal. Experience, as well as the microscope; faith, as well as demonstration, must be our guides in our important mission toward mankind, and then, only, shall we be truly progressive and really useful—a credit to ourselves, an honor to our profession, and a blessing to the human family.

A CASE OF IMPALEMENT INJURY FROM PITCHFORK HANDLE

By A. N. BESSESEN, M. D.

MINNEAPOLIS

Impalement by the handle of a pitchfork is an injury of not infrequent occurrence in farming communities. Though sometimes apparently an unavoidable accident, it is generally the result of carelessness. In such cases a fork is left standing against a stack, or is thrown down by the farmer who then slides to the ground after it. A pitchfork resting with its tines on the ground and its handle against the stack cannot readily be seen by one on the stack. As a person slides down, the surface of the stack is depressed, while the handle of the fork is thrown slightly outward, just sufficient to inflict a most serious wound.

Such an injury must evidently be severe, since the penetration continues until the point of the handle meets with a sufficiently resistant tissue or the body comes into contact with the ground. Unless by some chance the fork handle is thrown out of the vertical, the impaled person is carried to one side or forward, at times breaking the handle. In such instances the penetration is not so deep, but the injury may still be extensive, owing to the severe lateral pressure on the tissues plus the penetration. The handle of the fork may glance off from the body, or may pierce the abdomen or flanks, but most commonly enters the body at the perineum.

Tielman's "Surgery" cites two cases reported by Madelung in which the penetration occurred by the piece of wood "gliding forward along the tense skin of the perineum to the scrotum, passing through the latter between the anterior surface of the os pubis and spermatic cord, then between the peritoneum and abdominal muscles as far as the free border of the ribs." Dr. Frank Burton, of Minneapolis, had a case about ten years ago, in which a fork handle entered the anus and traversed the lumen of the large intestine a distance of twelve or more inches without serious injury to the internal organs.

The case I wish to report occurred in the practice of Dr. M. J. Jensen, of Minneapolis. It may be well to insert an extract from his notes on the case.

"On August 4th, 1907, called to see Mr. C. K.,

milkman, 30 years of age. While putting hay down a chute in his barn, slipped and fell down the slide, striking the end of a pitchfork handle, which penetrated the abdomen fully a foot and a half, then breaking off. With rare presence of mind and wonderful will power, C. K. extracted the piece of wood, and then fainted from loss of blood. After a time he recovered consciousness and then managed to get into his house, where he was soon attended by Dr. Jensen. Examination revealed a stellate-torn wound to right of anal orifice, and slow bleeding. Patient exhibited shock and complained of severe pain in abdomen.

"Taking into consideration the history of the injury and the physical signs, I decided to take the injured man to the hospital. Morphine, $\frac{1}{4}$ grain, was administered, and orders given to prepare for laparotomy if necessary. The patient grew gradually worse, and the typical abdominal facies was present."

The patient was admitted to St. Mary's Hospital at 2:30 p. m., where I was requested by Dr. Jensen to attend him. When I arrived, at 4 o'clock, the patient had been resting nearly an hour and a half on the operating-table in a warm room. He seemed to suffer somewhat from shock, but appeared vigorous. Ether was administered, and the patient was brought into the lithotomy position, and the perineum prepared. An irregular tear appeared to the right of the anal margin admitting readily two fingers. On digital examination a similar though smaller tear through the rectal wall was felt just above the sphincter muscle, while a tract of the wound extended upward as far as the fingers could reach through the soft tissues of the pelvis to the right of the rectum.

The rectum seemed empty, so the wound in the pelvic cellular tissue was irrigated with sterile water. There was some return flow, but it was soon evident that a considerable amount did not return, although the anus and wound were held open. It thus became clear that the perforation extended into the peritoneal cavity. Sterile

dressings were then placed over the perineal region, and the patient brought back into laparotomy position. The lower abdomen was prepared for operation, and an incision five inches long made in the median line from the pubes to the umbilicus. About a quart of water mixed with blood and some fecal matter gushed out. The omentum appeared shriveled and of a dull-gray color. The table was then tilted so as to give the patient the Trendelenburg position. The intestines and omentum were held back by large, warm, gauze sponges. A clear view was thus obtained of the pelvic cavity, and a large irregular tear fully three inches in length was seen along the anterior surface of the sigmoid, about two inches above the rectopelvic fold of the peritoneum, which itself showed a perforation communicating with the wound below.

It would thus seem that the pitchfork handle must have penetrated the perineum just to the right of the anus and by traction on the deep fascial tissues caused a tear in the lower rectal wall. Still continuing outside the gut it entered the peritoneal cavity at the point of reflexion of the peritoneum on to the bowel. It must then have pierced the right anterior wall of the sigmoid and have continued some distance in its lumen.

No other injury was found. The appendix was diseased, fusiform in shape, two and one-half inches long and over one-half inch thick, and tense. I did not, however, interfere with the appendix, since the patient's condition appeared critical, and I had no authority to operate except for the injury.

The tear in the sigmoid was repaired by continuous catgut sutures in two rows. A drain was passed from the opening in the peritoneum to the external wound in the perineum. A large rubber tube covered with iodoform gauze and gutta-percha tissue was placed so as to drain the injured area through the abdominal incision. The table was then lowered, and the gauze sponges removed. The omentum was brought down without tension to cover the injury in the large bowel, and the abdominal incision closed except at the point of drainage.

The perforation in the lower rectal wall was next sutured with a few interrupted catgut sutures, and the patient taken to his bed at six o'clock.

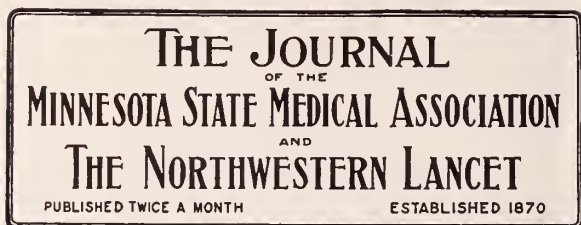
He was placed in Fowler's position and surrounded with hot-water bottles. His pulse at that time was 104, respiration 24, temperature not recorded.

Dr. Jensen took charge of the after-treatment of the patient, and I extract from his notes the following:

"Patient removed from the operating-table and nothing given by mouth except cracked ice, heart stimulants and morphine, $\frac{1}{4}$ grain, hypodermically, every six hours. Patient kept quiet as possible, rested well all day and night. Highest temperature per mouth 105 degrees; urine removed by catheter; pulse 110. Next day morphine discontinued and strychnine continued. Liquid nourishment given every four hours in small quantities and was retained. Patient went on this way, dressings changed twice in twenty-four hours first week. Pus increased, and dressings changed every four hours. Perineal wound healed after first week. Bowels moved by enema after fifth day. During second week had bad hiccough—nothing would stop it until morphine, gr. $\frac{1}{4}$, was given twice, four hours between. Third week, tube removed, and gauze (iodoform) strip inserted at each dressing three times in twenty-four hours. Twelfth day, temperature rose to 103 degrees; patient became weak, cold sweats, unconscious. Swelling above anterior wound. Was afraid he would die. Inserted probe, some thick pus, moist lysol dressing kept on and changed every three hours. Patient improved, temperature went down; pulse had been up to 106, but came down to 100 in 36 hours. Bowels moved, appetite came back, rested well. At one time thought of new incision, but patient got better and worse at times until free discharge of pus, and on fifth week wound ceased to drain much, and patient improved greatly in strength.

"Ung. Crede and protonuclein was given until seventh week patient was discharged as able to go out and is at this time almost perfectly well."

A review of this case inclines me to the belief that I should have removed the diseased appendix, as the high temperature and symptoms of collapse that occurred on the twelfth day may have resulted from a rupture of the appendix. The presence of the abdominal drain and the use of the probe allowed a sufficient drainage, and fortunately the patient made a safe recovery.



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APRIL 1, 1908

The annual meeting of the State Medical Association will be held at St. Paul, October 7 and 8, 1908.

VOMITING AFTER ANESTHESIA

Many plans have been suggested to prevent the annoying and distressing vomiting after an anesthetic, but none seem wholly successful. McArthur's method consists in giving two ounces of fresh cold water to be drunk after midnight on the morning of operation, repeating this every fourth hour until two hours before the operation, when ten ounces are given and repeated just before anesthetization begins. This plan is endorsed by L. G. Gunn in an article in the Medical Press and Circular, London.

McArthur believes that the vomiting is due to swallowing of anesthetic-laden saliva, which a stomach full of water dilutes. Gunn does not endorse this explanation, but he offers none in its place. The suggestion of McArthur seems reasonable and doubtless applies to many individuals, and as it is simple to carry out it is worth while to try it, even though it relieves only a few of the great number who undergo anesthesia.

Is it not probable that prolonged anesthesia or

the anesthetizing of certain individuals produces a toxic-blood state which affects the centers in the medulla and an inhibition of the pneumogastric nerve? It is a matter of common observation that a few persons recover from an anesthesia without nausea or vomiting; another class recover quickly if given large quantities of water, and thus clear out the stomach. Unfortunately, another class do not recover from the anesthesia, but die without regaining full consciousness. This class probably are the victims of latent uremic states, and the toxic effect of the anesthetic sets the uremic explosive in motion, the blood-stream is unable to purify itself, and death results. The usual explanation is death from shock, which is a convenient term to cover an unrecognized physical disability.

Whenever possible, it would seem wise to give lavage a trial, even though it produced temporary discomfort, surely less than protracted and prolonged vomiting. An abundance of clean water and fresh air are the remedies that suggest prompt relief.

THE LATE NICHOLAS SENN

The issue of the Journal of the A. M. A. for March 14th contains the last "Travel Notes" written by Dr. Senn. This concludes a long list of observations in foreign countries that have been contributed by Dr. Senn to the Journal during the past few years. The many students and physicians who learned to love this world-renowned surgeon will regret his death and the cessation of his teachings and writings. In most ways he was a remarkable man, and his name and fame were so widespread that his memory will outlive many of a younger generation. All of the medical schools and medical societies of Chicago combined to pay tribute in the memorial services held at Music Hall, Fine Arts Building, Sunday, Feb. 2, 1908.

Dr. Frank Billings spoke of "Nicholas Senn as a Teacher"; Dr. Quinn, of "Nicholas Senn as a Man"; Dr. Edwards, of "Nicholas Senn as a Scientist"; Dr. Favill, of "Nicholas Senn as a Physician"; Dr. Ochsner, of "Nicholas Senn, the Surgeon"; Dr. Brower, of "Nicholas Senn, a Traveler."

These men were all intimate friends and knew Dr. Senn thoroughly, and all recited with wondrous praise his many qualities. Honors were showered upon him in every quarter of the globe, and he probably was better known than any other living surgeon.

Every physician and surgeon who attends the meeting of the A. M. A. at Chicago in June will pay reverence to the memory of Dr. Semm.

QUACK METHODS OF ADVERTISING

Minnesota should feel a keen sense of humiliation on account of the indecent familiarity that has recently sprung up between the four great daily newspapers and a long-gray-headed and big-hatted quack doctor.

His advertisements have occupied columns of space and are full of the most absurd promises of cure. For some strange reason he was arrested for practising medicine illegally, and is to appear for trial because of the admissions of witnesses before the preliminary hearing.

The man's methods are so absurd and comical that a person of average intelligence ought to classify him at once as an impostor; yet in spite of the audacity of his claims three or four newspaper men appeared before the U. S. Court Commissioner and attempted to justify the quack and his quackery. The reason is obvious: he paid the newspapers for printing his statements.

This particular quack employs a newspaper man to write his advertisements and to write the testimonials that the hypnotised patient is so willing to sign after a few treatments. This method of advertising is not unusual, but it is unusual for the average quack to employ a paid writer as one of his assistants.

After the preliminary hearing the advertising agent rewrote the proceedings in an attractive form, with a few needful modifications, and published them in three-column form under a suggestive headline in which he skillfully attempted to gain the sympathy of the reader and to give the impression that the "old doctor" is a much-abused person and that he can readily cure all sorts of chronic diseases that other doctors have failed to relieve, and do it by the application of a piece of magnetised canton-flannel, with or without absent treatments. The advertisement claims, further, that two physicians of Minneapolis, who do not, however, occupy an exalted or prominent position in medical circles, have been patients of the much-abused quack and have themselves been cured of minor ailments!

Minneapolis seems to be overrun with quack institutions this year, as shown by the glaring and misleading statements of sanitariums for the cure of tuberculosis and for the relief of acute and chronic diseases of men, women, and children by suggestive therapeutics. These institu-

tions, the Bellevue and the Gates Sanitariums, have been the subject of much criticism, for the reason that they appeal to the ignorant who suffer from incurable diseases. It is a fixed business rule with these, and all similar institutes of quackery, to find out how much money the patient possesses, then by their deft ways to secure the lump sum before treatment is begun. When the money is paid in and the time-limit for treatments has ended, these unfortunates are thrown out upon the city and cared for by various charity organizations. This is the strongest point in the effort to suppress quackery and will, in the end, do more than anything else to call the attention of the authorities to the necessity of protecting the ignorant from becoming victimized.

It is apparently useless for medical men or the Board of State Medical Examiners to undertake to prosecute quack methods. It must come from the people who awaken to a sense of duty toward their weaker brothers. The county and state authorities will pay more attention to the demands of the man of business than to one who places himself in a seeming attitude of jealousy. In the meantime, the medical man should labor with the newspaper man and point out the errors of the latter, just as the latter is so constantly referring in a slurring way to the errors of the former. Perhaps in time we may see the elimination of quack advertisements in the daily press—when the money gives out.

TOO MUCH BACTERIOLOGY

Paris and London physicians exchange visits on alternate years, and thus keep in close touch with the theories of both the Kingdom and the Continent. At the last reunion in Paris, on March 14th, Sir Dyce Duckworth, of London, addressed the Faculty de Medicine on "Too Much Bacteriology" for his text. He pleaded for the old doctrine of diathesis, or the study of habits of the body predisposing to certain diseases.

The principal study of the medical profession should be man, from his birth to his death, including all his habits and surroundings. The personal factor and a long clinical experience show the medical man that soil first and seed later are the proper methods of viewing the doctrine of diathesis. Many people who are predisposed to rheumatism and gout have tissues that are antagonistic to the bacilli of tuberculosis. Dr. Duckworth added that "it is said that

the old conception of a scrofulous or lymphatic habit of body was a stupid doctrine of the Middle Ages, which had been demolished by the discoveries of Koch." The speaker called this new doctrine a monstrous absurdity, and said that bacteriology had run mad. He believed it possible to be scrofulous all one's life without becoming consumptive, and to be predisposed arthritically without becoming rheumatic or gouty. The developments are accidental, not inevitable, and can be avoided by prudent measures. His address will be considered by many as behind the times, but it depends on how one looks at the field of medicine. It is possible to be extremely narrow or to accept too broad a viewpoint. The happy and scientific medium lies in the adjustment of the old and the new ideas. We have not advanced in some of our views over those of ancient times; in other ways we have opened and developed entirely new fields, but we must not cast aside the fundamentals and the individual potentiality. Modern medicine is often a present-day adjustment of old ideas clothed in different terms and treated in a more refined and agreeable manner.

There is so much to see and learn now that we have but a hazy outline of the real thing, and to appreciate what we see it is necessary to centralize on the man and his characteristics. When we recall that about fifty per cent of all so-called disease-states are due to the influences of the mind over the bodily functions it is not strange that we are led into erroneous by-paths and seek an explanation in bacteriological possibilities rather than in the simpler conditions that are so frequently overlooked. The experienced and careful observer sees through the maze of symptoms, although he accepts and considers the aid of the bacteriologist. The structure and the resisting power of the tissues depend upon the inherent foundation of the individual, and to this end we study soil rather than seeds.

CORRESPONDENCE

REQUIREMENTS FOR ADMISSION TO THE STATE SANATORIUM

St. Paul, March 23, 1908.

TO THE EDITOR:

Some members of the profession throughout the state do not understand the modus operandi of sending patients to the State Sanatorium for

incipient pulmonary tuberculosis at Walker. This fact has been very forcibly impressed upon the management, because a number of patients have been sent directly to the institution without even the formality of an application. Many of these cases have been in the advanced stage of the disease and were not suitable patients for sanatorium treatment. It is a gross injustice to send very sick persons on such a long journey only to be told at its end that they can be kept but a few days at the sanatorium and must then return to their homes.

In a few weeks the sanatorium will probably be full. As soon as the institution is full the superintendent is required to keep a waiting-list and admit patients in the order of their applications, therefore he cannot admit applicants who come unannounced because someone would have a prior right to a vacancy that might exist at the time the unexpected patient arrived. It is necessary for the superintendent to conform to the law. The profession throughout the state should acquaint themselves with the provisions of the law, in order to protect their patients from the hardships of a fruitless journey to Walker and back again, and themselves from the just indignation of any patient who has had to suffer in this manner on account of the physician's ignorance of the statute.

For the good of both physician and patient it would be as well for the profession to thoroughly appreciate the fact that it is just as irregular to send a patient, with bag and baggage, to apply personally at the Sanatorium as it would be to try to force an insane patient into one of the state hospitals without a legal commitment. The best method is for the physician to write a short history of the case to Dr. Walter J. Marcley at Walker, giving temperature-range, extent of the disease, and so forth. Dr. Marcley will at once send an order to the patient, unless the Sanatorium is full, and in this case he will send the notice as soon as there is a vacant bed, and then the applicant can be examined by an examiner. After this examination the patient is notified of his acceptance or rejection.

If the profession will follow these few directions, they will save themselves and their patients much annoyance.

H. LONGSTREET TAYLOR, M. D.,
Chairman of the Advisory Commission.

REPORTS OF SOCIETIES

BLUE EARTH SOCIETY

The Society met on February 24th, with seven members present. Dr. Helen Hughes read a paper on "Fibroids Complicating Pregnancy."

T. C. KELLY, M. D., Secretary.

STEARNS-BENTON COUNTY SOCIETY

The Society met in St. Cloud at Dr. R. I. Hubert's residence, at a 6 o'clock dinner, on Feb. 20th, with 16 members present. Papers were read as follows: "Anatomy of the Stomach: Its Surface Relations and Relations to Other Organs," by Dr. H. L. Lamb; "Diagnosis and Differential Diagnosis of Ulcer of the Stomach," by Dr. W. L. Beebe; "Medical Treatment of Ulcer of the Stomach," by Dr. E. A. Woods; "Surgical Treatment of Ulcer of the Stomach," by Dr. James D. Barrett. Discussion by the members of the above subjects brought out very interesting experience and facts. A very enjoyable time was spent at Dr. Hubert's residence.

J. C. BOEHM, M. D., Secretary.

HENNEPIN COUNTY SOCIETY

A mid-monthly meeting of the Society was held in the Society's rooms on the tenth floor of the Donaldson Building on March 16th. In the absence of the president and vice-president, Dr. C. G. Weston presided. There were 401 members present.

Dr. E. S. Strout presented a case of "Quinine Amaurosis." Dr. J. C. Litzenberg read a paper on "Surgical Necessities During Pregnancy and Labor." This was followed by a paper by Dr. A. E. Benjamin on "Surgical Necessities Following Labor." The discussion was opened by Dr. A. B. Cates and entered into by Drs. A. W. Abbott, H. L. Williams, F. R. Woodard, E. V. Green, A. T. Mann and J. W. Little, being closed by Drs. Litzenberg and Benjamin.

Dr. H. L. Staples moved that a committee of five be appointed by the president to take up the matter of rental charges for telephones and urge the city council to pass a telephone ordinance fixing a fair maximum rate or charge; seconded and carried unanimously. Committee: Dr. H. L. Staples, chairman; Drs. J. W. Bell, R. J. Hill, C. A. McCollom, C. G. Weston.

C. H. BRADLEY, M. D., Secretary.

ABERDEEN (S. D.) DISTRICT SOCIETY

A meeting of the Society was held at Aberdeen on the evening of March 17th, the meeting being called to order by the president, Dr. H. J. Rock.

Interesting cases were reported by Drs. Chichester of Redfield, Martin of Summit, and Rock of Aberdeen. A committee was appointed to draft resolutions of sorrow over the death at Redfield of Dr. Burch.

An excellent paper was read by Dr. D. E. Arnold, of Aberdeen, on "Prophylaxis (educational) and the Treatment of Gonorrhea." It provoked a general discussion. A very able paper by Dr. F. A. Powell, of Sioux City, Iowa, on the "Treatment of Corneal Ulcers" was next on the program, and created much interest and considerable discussion. Dr. Percy Peabody, of Webster, not being present, Dr. Van Buren Knott, of Sioux City, Iowa, next presented his classic paper on "Primary Sarcoma of the Liver," and presented a case of his own. The subject created much interest on account of the rarity of the condition and the able way in which it was presented.

Drs. Knott and Powell were then unanimously elected to honorary membership in the Society, in recognition of their many services to our district and state societies.

Drs. A. J. Button, of Bowdle, C. C. Hoagland, of Veblen, H. I. King, of Aberdeen, and J. C. Gilfilan, of Aberdeen, were elected to membership.

The programs for the meeting were tastily gotten up in orange and green in commemoration of St. Patrick's Day. After the adjournment a Dutch lunch was served, and the entire meeting was voted a success.

M. C. JOHNSTON, M. D., Secretary.

NEWS ITEMS

Dr. J. H. Drake has located at Buford, N. D.
Dr. H. C. Burch, mayor of Redfield, S. D., died last month.

Dr. F. L. Darland, of Davenport, Iowa, has located at Sherwood, N. D.

Dr. G. Oppliger has moved from Beaudette to Spooner, a new Minnesota town.

Dr. R. I. Hubert, of St. Cloud, has been re-appointed county physician for Stearns county.

Dr. W. R. Newmarker, of Edgemont, S. D., was married last month to Miss Metta Hensley, of Columbus, Neb.

Dr. A. B. Cole has withdrawn from the firm of Drs. Cole, Drought & Kittleson, of Fergus Falls.

Dr. F. H. Roberts, who practiced at Plainview for over forty years, died at Rochester last month at the age of 77.

Dr. Arthur Kahala, who recently went to Idaho to practice, has returned to Erskine to resume practice at that place.

It is said that it requires sixteen 'buses to carry the people from the railroad station to John Till's farm-house near Somerset, Wis.

Dr. Maurice M. Dodge, who practiced at Albert Lea for a number of years, died last month at Tacoma, Wash., at the age of 65.

Dr. A. J. Stone, of St. Paul, has resigned from the State Board of Health because he was unable to give the time required for the work.

Dr. Mary R. Strickler, of Sleepy Eye, is home from Chicago, where she has been doing post-graduate work in Cook County Hospital.

Dr. Wm. H. M. Phillips, of Hope, N. D., died last month at the age of 56. Dr. Hope was one of the pioneer physicians of North Dakota.

A nurses' bulletin or register is to be kept in one of the drug-stores of Austin to enable physicians to obtain a nurse on short notice.

Dr. James F. Jones, who formerly practiced at Fargo, N. D., died last month in Arizona, where he went five years ago because of failing health.

Dr. Alex Barclay, a 1907 graduate of the State University, has located at Aitkin. Since graduation Dr. Barclay has been working in St. Mary's Hospital at Duluth.

Dr. Arthur H. Schwartz, of Duluth, announces that his practice hereafter will be confined to skin, venereal, and genito-urinary diseases. Dr. Schwartz has offices in the New Jersey Building.

The building for the Good Samaritan Hospital of Rugby, N. D., is nearing completion. The building will cost about \$50,000 and is a fine-looking structure. The hospital will accommodate about sixty patients.

"Prof. Dr." Birkholtz, a healer of Minneapolis, has been bound over to the federal grand jury upon a charge of using the mails in his practice for fraudulent purposes. The charge grew out of the testimonials he used.

Thirty physicians and students took the examination for internes for St. Joseph's Hospital of

St. Paul. Of the six successful candidates two are State University students, two are from St. Louis, and two from Omaha.

Dr. C. J. Ringnell, of Minneapolis, who is making his third trip in Cuba, writes very enthusiastically of the climate, which he thinks much superior to that of California or Texas. Dr. Ringnell may extend his trip to South America, and we hope he will give our readers the benefit of his observations.

Drs. Alymer and Meurer, of Minneapolis, have purchased the Dr. Sandberg summer resort at White Fish Lake, near Jenkins. This is one of the most beautiful spots in the state. The doctors are undecided whether to let it be used as a summer resort or to retain it for summer residences for themselves and friends.

Dr. J. P. Humes, of Winnebago City, died last month at the age of 71. Dr. Humes came to Winnebago in 1857, and began the practice of medicine there in 1866. After beginning practice he took courses at Rush and at the College of Physicians and Surgeons of New York. Dr. Humes lived and died a greatly beloved man—the ideal family physician.

SUBSTITUTE WORK WANTED

A senior medical student (aged 35) wants substitute work for two or three weeks during April. Address H. M., care of this office.

POSITION WANTED

A graduate nurse, experienced in surgical work and the administration of anesthetics, who has been superintendent for several months of a small hospital, desires a similar position, preferably in Minnesota; or would act as general assistant. Address D. C. D., care of this office.

PHYSICIAN WANTED

Exceptional opening for wide-awake German physician. The best, old-settled farming section in this big, wide world. Nothing to buy. Move right in and go to doing business. For particulars write or telephone Buzzell Drug Co., Janesville, Minn.

TO THE PROFESSION—X-RAY LABORATORY

I have a well equipped x-ray laboratory, rooms 214-218 American National Bank Building, corner Fifth and Cedar streets, and am prepared to do your radiographic or Roentgen-ray therapeutic work.—W. S. FULLERTON, M. D., St. Paul, Minn.

PHYSICIANS' ATTENTION.—Drug-stores on easy payments, etc. Drug-store positions, United States or Canada. F. V. Kniest, Omaha, Nebr.

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FRACTURE OF THE ELBOW-JOINT*

BY J. W. ANDREWS, M. D.

MANKATO, MINN.

The first essential of successful surgery in and about any joint is a thorough working knowledge of the anatomy of that joint. This is especially true of the elbow-joint, for, while not the largest joint in the human body nor one having the greatest extent of synovial surface, yet none are more complex in their anatomical structure than is this joint. It is a typical hinge-joint when the trochlear surface of the humerus and the greater sigmoid cavity of the ulna are considered, and these constitute the greater part of the joint. The articulation of the head of the radius with the capitellum of the humerus broadens the joint. The short, thick, firmly attached internal and external lateral ligaments, together with the peculiar shape of the articular surfaces, absolutely prevent any lateral motion; therefore any lateral motion in the elbow-joint is due either to injury or disease. Ordinary flexion is limited by contact of the soft parts; ordinary extension is limited by the tendons of the biceps and the brachialis anticus, the anterior ligament, and the ventral portions of the lateral ligaments. Extreme extension and flexion are limited by the impact of the olecranon and coronoid processes in their respective fossæ. The head of the radius glides smoothly over the capitellum of the humerus, and is in closest contact with it when the arm is flexed nearly to a right angle, and, therefore, this is the position in which

pronation and supination are performed with the greatest ease.

The bony prominences about the elbow-joint are the external and internal condyles of the humerus, the olecranon and coronoid processes of the ulna, and the head of the radius. To these may be added the bicipital tuberosity of the radius. In one who is not too fleshy, all of these may be felt through the soft tissues; and their individual and relative positions should be carefully studied in every injury of the elbow-joint. A practice, much to be recommended, is to compare the injured with the uninjured joint. The most prominent and, at the same time, the most useful land-marks in determining the character of the injury to the elbow-joint, are the external and internal condyles of the humerus and the olecranon process of the ulna. In the normal extended position of the arm these three points fall in a line drawn from one condyle to the other, and whenever this relation is disturbed either a fracture or a dislocation has taken place. If one carefully and systematically examines all these anatomical land-marks about the elbow-joint while the patient is under an anesthetic, he should, in a large majority of cases, make a definite diagnosis; but my own pretty large experience in these unfortunate injuries, has taught me that in many of these cases it is very difficult to make a clean-cut, accurate diagnosis; others more skilled than myself may look upon it as an easy task. It must not be forgotten that these

* Read before the Blue Earth Valley Medical Society, Dec. 1907

bony prominences give origin to, or furnish points of insertion for, numerous muscles. The principal flexors of the forearm, the biceps, and the brachialis anticus are inserted, the former into the bicipital tuberosity of the radius, and the latter into the coronoid process of the ulna. The pronator radii teres arises from the internal condyle, and from the inner border of the coronoid process of the ulna, and is inserted into the middle of the outer surface of the radius. The triceps extensor is inserted into the olecranon process of the ulna, and a few fibres into the posterior ligament. The supinator brevis arises from the external condyle, the external lateral ligament, the orbicular ligament, and from the triangular surface below the lesser sigmoid cavity of the ulna. From this extensive origin, this little muscle passes downward, wrapping the upper part of the radius in a sling, and is inserted into the outer surface of the radius above the oblique line. All of the extensors and flexors of the hand arise from the lower part of the humerus in immediate proximity to the elbow-joint. It will be seen therefore that fractures in and about the elbow-joint may seriously, and frequently do, impair the future usefulness of the forearm or hand, or both.

The large nerves, which are deeply seated and lie in close proximity to the elbow-joint, are the ulna and the median. The former passes between the internal condyle and the internal border of the olecranon process of the ulna, and passes between the two heads of the flexor carpi ulnaris. The latter, the median, hugs the anterior ligament of the elbow-joint, and passes between the two heads of the pronator radii teres.

I am sure some of you will say, you are giving us too much anatomy; we can go to the text-books and learn this. I will admit the truth of the latter part of this statement, but, gentlemen, you cannot diagnose, or successfully treat, fractures of the elbow-joint except these anatomical facts are a part of your ready knowledge, burned into your memory as fire is burned into the heart of a volcano. When you are called to an accident resulting in the fracture of an elbow-joint, you cannot go to your text-book and study the anatomical relations of this joint. If you do the other fellow will get the case.

The fractures possible at the elbow-joint are:—

1. Separation of the lower epiphysis of the humerus.
2. Fracture of the internal epicondyle.
3. Fracture of the internal condyle.

4. Fracture of the external condyle.
5. Fracture of the olecranon process of the ulna.
6. Fracture of the coronoid process of the ulna.
7. Fracture of the neck of the radius.
8. A T fracture of the lower end of the humerus.

It should be remembered that these eight fractures include practically all the fractures that occur at this joint, and are not these enough to occur in any one joint? If the physician will keep these eight possible fractures in mind and study carefully their differential symptoms so that he can inquire into each, one by one, when he is called to attend an injury to the elbow-joint, it will add much to the accuracy of the diagnosis and will facilitate his work.

When we contemplate the many important anatomical structures in the elbow-joint, and the difficulty of securing a perfectly functional result in attending the fractures of this joint, and the further fact that the laity expect, and hold us responsible for, a perfect result, two thoughts force themselves upon us: First, and of the greatest importance, we should be thoroughly familiar with all that pertains to the diagnosis of these injuries; second, and of lesser importance, we should be well compensated for our work.

TREATMENT

The same principles hold good in treating fractures of the elbow-joint that obtain in fractures of any other joint, or indeed fractures remote from joints.

1. There should be a proper and as nearly perfect reduction of the fragments as can possibly be secured.

2. There should be a fixed dressing so applied as to hold these fragments in place until union takes place.

When the physician is called to treat fracture in the elbow-joint he is often at a loss to know in what position to place the arm when he puts on the immobilizing dressing. Germane to this subject are the following questions: Shall the arm be placed in the straight position, i. e., the forearm extended? or shall immobilization be secured with the forearm flexed to a right angle? or shall the dressing be applied with the forearm brought to an acute angle? Shall the hand be placed in pronation or supination or semi-supination? In answer to the last question, I

will say that fracture of the elbow-joint should never be placed in an immobilized position with the hand pronated. The position should be either semisupination or complete supination. In answer to the first three questions, referring to the position of the forearm, whether extended, brought to a right angle, or an acute angle, were I to ask this intelligent body of physicians to answer these questions I am sure there would be quite a diversity of answers. Were I to consult the best literature on the subject I should find a diversity of opinion given by the recognized authorities. Do you wonder, then, that the ordinary practitioner is confused when he meets with a fracture of the elbow-joint, as to the best position in which to dress the arm? Of course, the first essential is to restore all broken fragments to their normal position. This cannot be done without the administration of an anesthetic; therefore, always administer an anesthetic even before an examination, except by inspection, for neither can the surgeon make a correct, clear-cut diagnosis, without going over the anatomical parts in a systematic manner, nor can he replace the broken fragments, except when the patient is under the influence of an anesthetic. a wonderful adjunct to the diagnosis, if the patient is where these can be used. The diagnosis having been made, and the broken fragments placed in their normal position, then the question, in what position will the arm be dressed? forces itself upon the surgeon. Dr. Gillette says that out of thirty cases reported by him dressed with the forearm extended, the result was perfect in 28, or 90.3 per cent, a very large percentage of perfect result in injuries of the elbow-joint.

The treatment of nearly every one of Dr. Gillette's thirty cases reads as follows: "Patient anesthetised; fracture reduced; plaster cast applied with forearm extended and fully supinated for four weeks. Perfect result." In some cases he leaves the arm in the plaster cast five weeks, and in some cases for six. In every case the cast is applied from the axilla to the fingers. In every case extension is kept up until the plaster is dry. The advantages claimed by the advocates of this treatment are, (a) ease of application, (b) a greater comfort to the patient, (c) less obstruction to circulation, (d) protection against the olecranon fossa becoming filled with callus. Other advantages are claimed for this position, but the above are sufficient for this paper.

The teaching of Dr. Scudder, an authority equally as good as our friend and neighbor, Dr.

Gillette, is directly opposed to the latter. I quote from Dr. Scudder: "Fractures of the epicondyle, of the internal condyle, and T fractures into the joint are best treated as a rule in the acutely flexed position." "Experimental evidence both upon the cadaver and the anesthetized living subject, confirmed by clinical experience extending over a number of years, in hospital and private practice, of many different surgeons, demonstrates that the acutely flexed position actively reduces, and holds reduced, the fractures above mentioned." In the acutely flexed position the coronoid rests in front, the trochlear surface of the olecranon behind, and the fascia posterior and laterally, together with the tendon of the triceps posteriorly hold the fragments reduced close to the shaft of the humerus.

The advantages claimed for this position are—

1. Nature's splints, viz., the coronoid process, trochlear surface, and other natural structures, are utilized.
2. The broken fragments fall more easily and completely into position.
3. The patient's body acts as a support and rest for the arm.
4. There is no pain associated with this position.
5. The carrying angle is best preserved.
6. A better prognosis.

For fracture of the humerus just above the elbow (not a T fracture), and fractures of the neck of the radius, Scudder recommends the right-angled position, with the internal right-angled splint; Gillette recommends the position with the forearm extended. For fracture of the olecranon process, Scudder recommends the right-angled position with the internal right-angled splint, provided the broken fragments are not widely separated; if they are then he recommends the forearm extended position the same as Gillette. In this these two gentlemen agree.

A form of splint suggested by my partner, Dr. Holbrook, and frequently used by us, is made by cutting cotton flannel in the form to fit the arm posterior and anterior, and then filled with wet plaster and molded to the arm in the position we wished to retain it. Any number of layers can be used, according to the strength of the splint required in each particular case. After these are held in position until they are dry, adhesive straps can be here and there applied in a circular direction. This dressing is easy of application, does not impede circulation, and

leaves a portion of the arm open for inspection; and the arm can be placed at any angle desired.

In treating these injuries two purposes must be kept constantly in the forefront: first, a perfect functional result; second, a perfect anatomical result. The former depends almost wholly upon the latter. In my earlier practice I am sure I have failed to obtain the best anatomical results, and hence the best functional results by being too anxious to avoid ankylosis, and therefore I would resort too early to passive motion. Two dangers arise from too early passive motion: first, displacing the broken fragments; second, increasing the size of the callus, either of which may lead to impaired function. Gillette says it is seldom, if ever, that you see a stiff joint if the joint tissues, especially the bony structures, are in their normal position. Active motion at

the proper time will accomplish vastly more toward restoring function than will passive motion. Massage should be instituted as early as possible—just how early will depend on the individual case, and I cannot give you a definite time rule; but it must be remembered that massage is not passive motion. Massage increases and equalizes circulation.

In my own experience I have not been so fortunate as Dr. Gillette in getting perfect results when using his methods. Perhaps ultimately most of my results have been reasonably perfect, but these have been secured by a period of weeks, and, sometimes, months, of massage and active motion after all dressings have been removed. Patience, skill, and knowledge are the only tripod upon which can rest perfect results in these most important fractures.

ULCERATION OF THE STOMACH*

BY H. W. SHERWOOD, M. D.

DOLAND, S. D.

In presenting this short article on ulceration of the stomach, I do not expect to be able to bring forth anything new, but only to call attention to the more salient facts about this not very uncommon disease.

Simple peptic ulcer is usually round and single, occurring in the stomach and also in the duodenum as far down as the papilla biliaria.

Though gastric ulcer is usually single and small, it may be multiple and very large, and irregular in its outline. There is one instance on record of 34 having been found in the same stomach. The usual size of the lesion is about that of a dime, and it is of a round outline; but Peabody reports one case of an ulcer that measured 10cm.x19cm., involving the entire lesser curvature and spreading to the anterior and posterior walls of the viscus.

The symptoms, etiology, and pathology of gastric ulcer, like those of appendicitis, were in a state of chaos until a more scientific study of the diseases of the abdominal viscera was brought about by post-mortem examinations and abdominal section. Although ulceration of the stomach was recognized in the days of Celsus and Mor-

gagni, the first authors who gave a complete description of the symptoms and anatomical changes of this disease, were Cruviellier and Rokitansky. Among the later authors who made a complete study and collected important statistics perhaps Welch stands at the head.

Etiology.—Clinically, simple ulcer is not so frequent as post-mortem statistics would lead one to suppose. In the extensive records collected by Welch about five per cent of persons coming to autopsy had either open ulceration or scars showing the undoubted existence of the disease at some prior time. Females are more frequently affected than males, and age seems to be a predisposing factor. Of 1699 cases collected by Welch, sixty per cent were in females. Three-fourths of the cases occurred between the ages of 20 and 60. The larger number of the cases occurring in females were between the ages of 20 and 30; of the males, between 30 and 40. While it is a lesion found mostly in adult life, Osler reports a case in a child of 12 years, and Gorgart one thirty-five hours after birth. The mode of living and certain blood-states are predisposing factors. The disease is more common in the poorer class than in the wealthy.

Anemia and chlorosis are causes not to be

*Read before the South Dakota State Medical Association, May 29 and 30, 1907.

overlooked. Certain occupations are also predisposing factors, as the disease is more prevalent in weavers, tailors, and shoemakers, these having occupations causing pressure over the stomach. According to Osler there seems to be a connection between large superficial burns and ulceration of the stomach.

While there is no universally accepted theory of the production of the gastric ulcer, there are two points generally admitted, i. e., that the ulcer is due to self-digestion of a portion of the mucous membrane of the stomach, and that, in order to produce self-digestion, the alkalinity of that portion must be reduced. This gives rise to the theory of thrombosis, and also explains why an injury over the stomach would produce ulceration. If thrombi are formed in the end-arteries of a certain portion of the stomach the blood-supply will be reduced at that point. The alkalinity of this part would thus be reduced, allowing it to be digested. I think this accounts for the fact that you seldom find ulceration with cancer of the stomach. In cancer the acidity of the stomach is reduced, and, although there are always parts of the stomach in which the blood-supply is diminished, you seldom find ulceration because of the lack of acidity. One of the most common predisposing causes of gastric ulcer is hyperchlorhydria. The alkalinity of the blood is reduced in nearly all forms of anemia, thus rendering a patient more liable to ulceration of the stomach. Osler states that the lesion is most frequently situated in the posterior wall and near the pylorus. Of 793 cases collected by Welch, 288 were in the lesser curvature, 235 on the posterior walls, 95 at the pylorus, 69 on the anterior walls, 50 at cardiac end, 29 at fundus and 27 on the greater curvature.

If the ulcer is small, it may heal without any detrimental results, or without definite symptoms, leaving a small white scar. If the lesion is large and deep, involving the muscular coat, and heals, it leaves a contracting scar; and if it is situated at the pylorus it may constrict the opening, causing dilatation. Large ulceration in the center of the organ has been known to produce hour-glass contraction. Were it not for the localized peritonitis that is induced and the protective adhesions formed, perhaps nearly all gastric ulcers would perforate. The spleen being situated just back of the stomach is often found adherent to the ulcer, thus forming a protective base to the ulcer. By the extension of the ulcerative process fistulous openings have been formed with the colon, pleura, pericardium, lungs, and gall-blad-

der. Osler gives two instances where the left ventricle was perforated. If the ulcer is situated in front, and perforation takes place, the result is usually general peritonitis and death. If a large blood-vessel is eroded, death also generally takes place from hemorrhage. Welch and Douglass give several cases where aneurysms were formed at the base of the ulcer.

Symptoms.—The initial symptoms are those of chronic gastritis, i. e., anorexia, epigastric fullness and oppression, eructations, and pyrosis. The main positive signs are pain, vomiting, tenderness, hyperchlorhydria, and hematemesis. Of these, pain is the most constant. It is usually of a dull, boring, and burning character. It is generally in the epigastrium, and is of a more or less periodical character, and is localized in a circumscribed area. The paroxysms occur usually from $\frac{1}{2}$ to 2 hours after the taking of food, and they disappear promptly after vomiting or when the contents have passed on to the duodenum. Then there are severe general gastric pains, which, no doubt, are due to the associated gastric catarrh causing irritation to the sympathetic nerves of the stomach. These radiate to the back. Finally, there are abdominal pains of perforation, which do not subside until the death of the patient. The taking of indigestible food will aggravate the pain. If the lesion is in the anterior part of the stomach the dorsal position will often relieve the pain after the taking of food; and *vice versa* if the lesion is in the posterior part. This, however, is not a reliable sign. When the pain is strictly localized, Anders has found it in most of his cases about one to two inches below the ensiform cartilage. Also, pain may be felt in the dorsal region of the 10th or 11th thoracic vertebra on the left side according to Butler.

Vomiting, next to pain, is the most frequent symptom, but unless the vomitus contains blood, it is not of diagnostic value, except to ascertain the reaction of the stomach-contents. It usually occurs at from one to two hours after the taking of food, and is sometimes preceded by eructation of gas.

Hematemesis is the symptom upon which the diagnosis depends; but this is present only in about fifty per cent of the cases. When hemorrhage is considerable the blood is ejected in a more or less clotted condition, and this is highly characteristic of gastric ulcer; but if, as it sometimes happens, the blood oozes into the stomach, it may be vomited in a partly digested form, and

in consequence of this the oxyhemoglobin is changed into hematin and the vomitus has the coffee-ground appearance. The blood may not be vomited at all under the latter condition, and be passed in the stools in a tarry condition. If the blood is vomited as soon as it comes into the stomach it may be bright-red, and the same appearance as that of blood in hemorrhage of the lungs, but the blood from the lungs is generally mixed with the mucus and air-bubbles, and often causes coughing. As the result of a copious hemorrhage, as in repeated small ones, marked anemia soon supervenes, causing the ulcerative process to continue.

Tenderness on palpation is found in some cases, but not in all. When it is localized in a spot in front that can be covered by one finger-tip, Butler considers it of value as a diagnostic sign. When an ulcer is of long standing, and the floor has become thickened and it is situated near the pylorus, palpation may reveal a tumor.

Osler gives eight different forms of gastric ulcer, but Anders thinks these divisions are useless, and that they merge into each other. Aside from the usual form of ulcer, Anders gives three typical forms: (1) latent ulcer, whose existence was never suspected during life; (2) an explosive form, in which the symptoms are manifest only a short time before perforative peritonitis; (3) a form described by Welch, in which the symptoms of ulcer appear, run a short course, and seem to subside for a longer or shorter space of time, and then recur. A course of this kind may keep up for years. There are cases reported that continued for twenty years.

Complications.—Perforative peritonitis is the most fatal complication and occurs, according to Welch, in about 6.5 per cent of the cases. It is not necessarily fatal, for some cases of this condition have recovered. Hemorrhage occurs in about 50 per cent. Other complications mentioned above were pyopneumothorax, fistulous openings in the adjacent cavities, and one case is reported where an external opening was formed through the abdominal walls.

Cancer may develop in the site of an old ulcer.

Differential Diagnosis.—The diagnosis of gastric ulcer is easy when the cardinal symptoms of pain, hemorrhage, and vomiting are present; but these are not all present in more than half the cases. It is necessary to differentiate between gastritis, gastralgia, hepatic colic, cancer, and the gastric crisis of spinal-cord disorders. Gastralgia is a symptom of gastritis, and is a separate affec-

tion, also, as well as a symptom of cancer and ulceration of the stomach, and cannot always be differentiated; but the absence of hemorrhage, and the fact that the pain is often relieved by taking food and by pressure, and the lack of emaciation, will generally suffice to clear the diagnosis.

The gastric crises of tabes can be diagnosed by the absence of knee-jerk, by the Argyll-Robertson pupil, and by the lightning-like pains. In chronic gastritis we seldom have hemorrhage, and the HCl is generally diminished or absent altogether.

Hepatic colic is differentiated by the sudden onset, absence of vomiting or the character of the vomitus present, and at times by the palpation of the gall-bladder. Bile is also usually found in the urine in this condition.

In cancer of the stomach we have the absence of HCl, sometimes tumefaction, coffee-ground vomitus, great emaciation, and cachexia, and the subject is generally over 40 years old.

Treatment.—Rest in bed and carefully regulated diet are very important. Osler says that, while theoretically it is better to give the stomach absolute rest by rectal feeding, practically it is not satisfactory. Articles of food should be used that are bland and that are digested and assimilated mostly in the bowel. By pursuing a combined method of feeding, the vitality will be best maintained. Anders gives the following dietary: at 7 A. M., 2 oz. of Liebig's beef solution; at 11 A. M., 4 oz. of pancreated milk gruel; at 3 P. M., 4 oz. of buttermilk; at 7 P. M., 4 oz. of milk gruel; and, in addition to this, rectal feeding as follows: 6 oz. of pancreated milk gruel given at 8 A. M., 2 P. M., and 8 P. M. Of course no hard and fast lines of diet can be laid down in this, any more than in any other, condition. If the stomach cannot retain food, and rectal feeding is depended upon entirely, the amount must be increased, and, if the rectum is irritated, this mode of feeding must be suspended for a while. Beef tea and malted milk can both be given by mouth or rectum. DaCosta reports a case cured by ice-cream. When the stomach is very irritable and vomiting persists, washing the stomach may be resorted to, but the tube should be used very carefully. The stomach can be cleaned quite satisfactorily by allowing the patient to sup a pint of warm water to which has been added sodium bicarbonate or sodium borate. This also overcomes, to a certain extent, the acidity of the stomach. Alkaline purgatives in mineral waters are

recommended, as they neutralize the acid, as well as keep the bowels open.

As to medical treatment, the object is to relieve symptoms and promote the healing of the lesion. Bismuth given in large doses with antiseptics, is beneficial. A drachm of bismuth given in 6 oz. of water on an empty stomach, placing the patient in a horizontal position, is a method used by Fleiner. Silver nitrate has long been used in this affliction, and as it benefits the catarrhal condition, which co-exists with gastric ulcer, it is usually beneficial. It may be combined with small doses of hyoscinum or opium for the relief of pain. Iron, strychnia, and arsenic are generally indicated to combat the anemic condition.

For the relief of urgent symptoms, such as vomiting, pain and hemorrhage, the following means may be employed: for pain hyoscinum or atropin is sometimes sufficient, but for severe pain nothing but morphine, hypodermically, is satisfactory. Vomiting can be relieved best by chipped ice. This also helps to control hemorrhage. Small doses of creosote and cocaine, or bismuth and cerium oxalate may be given.

For hematemesis, rest, application of the ice-bag over the stomach, ergotin, and atropin, hypodermically, are generally sufficient.

For repeated attacks of hemorrhage some advocate operation between the attacks.

Perforation calls for surgical interference as soon as a diagnosis can be made. Nothing more should be given by the mouth.

Bryant states that of the cases operated on twelve hours after perforation the mortality is only 16 per cent, but with operation much later than this, the death-rate is generally much increased.

REPORT OF A CASE

Mrs. K., married, aged 34 years, mother of one child. Six years before had some kind of anemia, and was sick for six months.

For several months before coming under my observation, she was feeling fair and had gained in weight; menstruation was regular. She had complained of a slight, gnawing feeling in the stomach, which was relieved by taking food. At times she belched up gas, and had general dyspeptic symptoms. On the morning of March 9, 1904, while visiting at the home of her sister and while at breakfast, after partaking of food, she had a faint feeling and became nauseated. She went to the door and vomited a pint of pure, red blood, the first of which came without any effort

In about five minutes she again vomited half a pint, and in ten minutes more she vomited about another pint mixed with food. I was called and arrived just after the last vomiting. I found her with a pulse of 80 and of fair volume. She kept bringing up small amounts of blood every hour or so until about 10 P. M., when she again vomited about a pint of dark, granular blood. Sometime in the evening the bowels moved with tarry stools. About 9 A. M., March 10th, she vomited again about half pint of dark, granular blood, and her bowels moved again with tarry stools.

Diagnosis.—Gastric ulcer.

Treatment.—After placing the patient in a horizontal position I gave her cracked ice and 1-500 atropin every two hours until the physiological effect was noticed by the dryness of the throat, also ergot, 5 drops every three hours. I forbade the patient to rise from the bed for any reason, and withheld all food for twenty-four hours. After the hemorrhage was controlled, I gave beef tea. I gave bismuth subnitrate, 10 gr., every three hours, for a short time, and also sulphocarbolate of zinc, 2 gr., with the bismuth. No morphine was needed to control the pain. Silver nitrate, $\frac{1}{2}$ gr., in a capsule, was given every four hours.

I gave the patient beef tea by the mouth, and after the third day gave a milk diet, also malted milk. The patient had no return of the hemorrhage and made a gradual improvement. She was under my charge for only seven days, when she returned home, traveling a distance of seventy-five miles by rail. She remained in bed for some time—just how long I was not advised. She has had no return of the hemorrhage at the present time, but is in rather poor health.

DISCUSSION

DR. E. T. RAMSEY (Clark): I must admit that my success in the treatment of ulceration of the stomach has not been particularly remarkable under any plan. The cases I have come in contact with have all been cases of chronic ulcer which, having been treated medically without success, have been referred to the surgeon.

What I want to say particularly is in regard to the results following operation. In the last eight years I have had 15 operations performed for this condition, and the ultimate results of the operations have invariably been poor. All have received more or less relief for a time, but in some the time has been exceedingly short. With one single exception, the patients got only temporary benefit, and that case is apparently cured after three years have elapsed since the operation. The trouble has not been because the operations were not done properly, as they have been done by eminent surgeons in every case. In one patient the trouble, at

least the symptoms, returned inside of a month, when the patient was again operated on. One patient was operated on three times without any permanent relief and with only temporary subsidence of the symptoms. One case died in nine months from a return of the ulcer, which ruptured. From the time of the operation until her death she had only short periods when she did not suffer from the condition.

It seems to me that the operation of gastro-enterostomy is one which we cannot become enthusiastic over for the treatment of this condition. From my experience with it I do not believe it is the proper operation except in a few well-selected cases where the obstruction is very great, and I believe that one reason for this is that the discharge of the acid contents of the stomach into the normally alkaline jejunum must have a very deleterious effect. Another reason which I believe has a great deal to do with the return of this trouble, is the almost invariable advice that patients get from the surgeon when he tells them to go home and eat anything they want. It has been my invariable experience for my patients to come back to me after an operation of this kind and tell me that the surgeon, no matter who he was, told them that they could eat anything. This seems to me to be entirely wrong, for in correcting the condition present this operation does not have any effect on the underlying cause of the trouble.

DR. J. C. LITZENBURG (Minneapolis): Ulcer is not unknown in the new-born, but it is not frequently found. I am at this time particularly interested in that very question of the hemorrhage in the new-born. I recently had a case of this kind in hospital practice, and all of the symptoms pointed to ulcer of the stomach. Although uncommon, ulcer must be thought of in these cases of hemorrhage in the new-born, and consultation with the internist sought.

I had one case in an adult, that was cured with medical treatment, and I just want to mention it to emphasize the point that time is an important element in the medical treatment of ulcer of the stomach. This case I had to keep in bed three months.

DR. D. W. CRAIG (Sioux Falls): I am a gastro-enterostomy, six months old, and had better sit down and keep still on account of my age. However, I might add a few words if the hour is not too late. Last fall, the latter part of October, I was about as near the edge of the grave as anybody would care to be and still be alive. For three weeks my health had been rapidly declining, and the last week I was confined to my bed entirely, and could not keep anything on my stomach. Three or four times a day I would wash out two or three quarts of sour fluid. On two occasions I raised a very little blood in my mouth, and was always hungry as a wolf, and dared not eat anything. It seemed very little if anything would pass out of my stomach. Stomach-ache had been my trouble for over twenty years. It kept me from doing the work I should have done while in college. It has retarded my practice. I congratulate myself that I might have been better informed than I am had I had better health while going to school.

I was operated on four years ago for this trouble, and at that time Dr. Ochsner removed the appendix and drained the gall-bladder. Two or three months after the operation I had the same pains as usual, and, as

Dr. Knott says, chronic constipation was an important factor in its etiology. I came out to South Dakota for a change of climate, thinking it might be a good thing for me, and for six months I enjoyed better health, but in the last six months my health declined, I was cross and disagreeable, and nothing seemed to agree with me or please me. Gradually it got worse, and the last three or four weeks became a serious question. Dr. Roberts went with me to Chicago. The next day after arriving I was operated on at Mercy hospital by Dr. E. Wyllis Andrews. He performed a gastro-enterostomy, using the McGraw ligature. For two weeks I remained in the hospital, at the end of which time I was taken over to the north side in an ambulance. During these two weeks in the hospital I was not given anything to eat for the first four or five days, being fed per rectum. About the fifth day I was allowed to take hot water, and gradually increased to a light diet, and by the end of two weeks I was taking full diet, gradually increasing in amount.

DR. O. R. WRIGHT (Huron): In regard to recurrence after operation: I have observed in fourteen years eighteen cases of ulceration of the stomach; nine of these underwent operation, the balance were treated by diet, rest, and medicinal measures. Out of the nine operated upon, but one has gone as long as four years without recurrence. This one I think is fully cured. In three of the cases sufficient time has not elapsed to tell what they will do. Of the five remaining the symptoms returned in from six months to two years after operation.

That recurrence also occurs in cases treated by other methods I am well satisfied. I have a woman who has suffered with gastric ulceration for about ten years, and she has been under the care of some of the best internists in Washington and Philadelphia. In this case I believe that she has several times been cured and that ulceration recurred in different parts of the stomach-wall.

My experience, from its limited field, leads me to advise treatment medicinally, if possible, and trust to healing rather than subject the patient to the dangers of an operation with so strong a chance for recurrence.

DR. F. M. CRAIN (Redfield): I would like to ask Dr. Rock a question. Did the autopsy confirm the diagnosis that had previously been made of pulmonary tuberculosis?

DR. ROCK: It did.

From the doctor's brief report of his case, the lack of the usual amount of hemorrhage in a gastric ulcer as extensive as this one, I am inclined to look upon it as a secondary tubercular involvement of the gastric membrane.

We not infrequently have secondary tubercular infection of the alimentary tract from primary tuberculosis of the lungs. It must not be forgotten that the walls of the blood-vessels show a determined resistance to the destructive processes of the tubercle bacilli and this fact may account for the lack of hemorrhage that would probably accompany so extensive an ulceration.

ASSOCIATION OR CONFUSION OF APPENDICITIS WITH OTHER DISEASES OF THE FEMALE PELVIS*

BY A. E. BENJAMIN, M. D.

MINNEAPOLIS

In 1809 Ephraim McDowell, of Danville, Kentucky, diagnosed and successfully operated upon an ovarian tumor. A similar laparotomy was performed by John L. Atlee, of Lancaster, Pa., in 1843, and it was not until after this operation that gynecological surgery developed and the operation was repeated by other surgeons here and in Europe. This period marked the foundation of all future abdominal surgery. So much success attended the operations upon diseased ovaries and tubes that this class of surgery became quite popular among certain specialists. Operations became more numerous, and the field began to widen. So enthusiastic were some of the men that many hitherto unexplainable symptoms began to be attributed to some disease of the ovaries or tubes, consequently these organs were often operated upon and removed unnecessarily.

Quite often patients continued to suffer with the same complaint, or new symptoms developed. This post-operative suffering that continued for months, and perhaps for years, was attributed to the ligature (often of silk), which was used to tie off the broad ligament or tube, and was termed the "painful stump." In such cases, later, the real cause of suffering was found to be a disease of the appendix, gall-bladder, kidney, or some other abdominal organ, and a cure was established only when the appendix was removed or the actual disease eradicated.

As these facts became generally known, and the role a diseased appendix played in the cases, the pendulum began to swing in the opposite direction. This organ was then blamed for many a symptom complained of. A tender McBurney's point or any other right-sided pain became the *sine qua non* for an operation.

The reputation of many men grew for no other reason than that they confined their work to men, or by chance happened upon the organ causing more or less disturbance. These and many others met their Waterloo when they began to widen their field of usefulness (?) and to attribute the cause of nearly all distress in women, with more or less complex symptoms, to a diseased appendix.

When such patients continued as great sufferers as before the operation, it perplexed the operator and discouraged the patient, and also cast discredit upon surgery in general. It remained for the gynecological surgeon to step in and point the way. Instead of working downward he was "upward striving." He had long before this solved the problems of pelvic surgery, had gone beyond the appendix and had about reached the gall-bladder and stomach. The theory of a definite relationship in many cases between a diseased tube or ovary and the appendix was established; in some instances between the appendix and the gall-bladder.

The mistakes made in diagnoses, at the present day, are the result of carelessness or ignorance on the part of the physician. Because of the scarcity of time a number of physicians go over the history of their cases incompletely. An examination is superficially made, or the physician is not familiar with the complex diseases of the abdomen. He therefore naturally, because of his narrow vision, attributes the symptoms to a disease with which he is at least partly acquainted. He advises the removal of the appendix. The consequences are no more than could be expected: the case is partially helped or totally unrelieved. The appendix removed may have had some of the earmarks of a diseased one, yet it may have caused little or no suffering.

UNUSUAL LOCATION OF A DISEASED APPENDIX PRODUCING MISLEADING SYMPTOMS

The location of the appendix greatly modifies the symptoms even in a simple case. Especially is this true when adhesions to neighboring organs occur, such as to the gall-bladder, tube, ovary, uterus, bladder, hernial sac, abdominal wall, loop of intestine or adherent to peritoneum over the ureter or high up back of the colon.

Symptoms of disease of any of these organs to which the appendix is adherent, may be present, such as gall-stone disease, or tubal or ovarian trouble. Symptoms of renal calculi, stones in the ureter, etc., may be observed when the appendix is attached over the ureter.

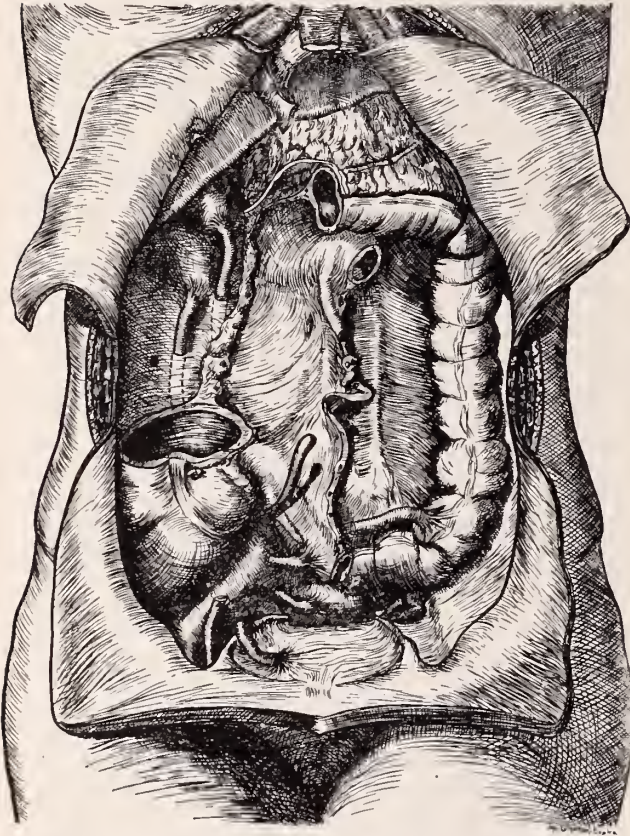
Symptoms of cystitis, with frequent and painful micturition, are observed when the appendix is attached to the bladder. When the appendix

*Read before the Western Surgical and Gynecological Association, December 30, 1907.

is located on the opposite side of the abdomen and adherent to a coil of intestine, a mistake in diagnosis is very likely to occur. An unusually long appendix may encircle a loop of intestine, causing acute obstruction of the bowel. An appendix is occasionally found within a hernial sac at operation, and thereby explains the peculiar symptoms in such instances. Symptoms of strangulation without external or palpable signs of the same are often present.

In case of gangrene, rupture, and peritonitis or abscess-formation, all symptoms are greatly aggravated, and one of the most virulent conditions may occur with systemic infection when the ap-

Gastritis and perigastritis with adhesions,
Gastric ulcer,
Duodenal ulcer,
Duodenal obstruction,
Duodenal adhesions,
Gall-stones,
Cholecystitis,
Gall-bladder adhesions,
Liver abscess,
Pancreatitis,
Nephritic colic,
Nephritic stones,
Hydronephrosis,
Cystic kidney,
Cancer,
Intussusception,



A collective picture showing the various points of attachment of the vermiform appendix to the gall-bladder, kidney, abdominal wall, ileum, uterus and adnexa, sigmoid flexure, bladder, and a hernial sac.—From Kelly.

pendix is located high up back of the colon. Here the lymphatics soon carry the poison into impenetrable localities. In case of rupture, sooner or later contiguous organs are involved to such an extent that when an abscess occurs and the examination is made, it may be late to determine which organ was the primary seat of the disease.

Other diseases of the abdomen which may be associated with appendicitis are—



Appendix adherent to the systic ovary, and the ovary adherent to the uterus.

Volvulus,
Meckle's diverticulum,
Viceroptosis,
Gastric dilatation and prolapse,
Nephroptosis.

As my paper deals especially with the pelvic association of appendicitis, I shall refrain from saying much about these conditions, except to mention some necessary points.

Gall-stone disease is so frequently associated with appendicitis that it is necessary, in some instances, to withhold a positive diagnosis until the case is operated upon. As duodenal ulcers

with adhesions are confounded with gall-stone disease they, too, are confusing to the diagnostician.

A prolapsed kidney with a kinking right ureter resembles in some degree appendiceal colic or disease. A troublesome Meckle's diverticulum may accompany, or the symptoms may resemble, an attack of appendicitis. I have seen a few cases of this nature. In each of two cases there was a badly diseased appendix. One diverticulum was adherent to the cecum.

DISEASES OR CONDITIONS OF FEMALE PELVIS ASSOCIATED WITH OR SIMULATING APPENDICITIS

Salpingitis,
Peritonitis,
Ovaritis,
Prolapsed ovary,
Twisted pedicle of ovarian cyst,
Fibrocystic ovary,
Adherent ovary or tube (chronic),
Retrodisplacement of uterus,
Retrodisplacement with adhesions,
Tubercular peritonitis,
Cancer or tumors.
Ectopic pregnancy,
Ureteral stones,
Bladder stones,
Cystitis,
Fibroid of uterus (parasitic).

Acute salpingitis is frequently diagnosed appendicitis, and an immediate operation advised, and often performed, for the removal of the appendix.

Personally, I see a great many young women who have had the appendix removed, but not their disease. There are often later, positive signs of peritonitis, ovaritis, and fibrocystic degeneration of the ovaries or pyosalpinx and tuboövarian abscess in these cases. On the other hand, I have seen young women greatly afflicted with pain from adhesions and disease of the adnexa in whom no known reason for such a condition existed, other than from attacks of appendicitis, not recognized, when they were young girls. In some the disease had nearly destroyed the tube and ovary.

I have frequently observed, even in young women, alone or associated with a retrodisplaced uterus, a chronic hypertrophy of the tube, thickened tunica of the ovary, and numerous small or medium-sized cysts. These cysts may not be painful if the ovarian covering is thin, or after the cyst has burst through this wall. More frequently—and this is found in the moderately enlarged cystic ovary—the tunica is very thick and

firm, resulting in severe pain at the menstrual period because the ovary cannot expand or allow of ovulation. Cysts form in the Graafian follicle or corpus luteum.

Perhaps a chronic congestion of the pelvic organs is responsible for this condition and acts as an equal causative factor of a chronic form of appendicitis, which is so frequently associated with this form of trouble. It is unnecessary to sacrifice these ovaries in an operation; a simple resection with the removal of the cysts and the outer thick covering of the ovary should be practiced. A modified Gilliam operation restores the uterus and adnexa to their normal circulatory plane. Dysmenorrhea, so frequently complained of and often unrecognized in this class of cases, is relieved and with the diseased appendix excised through the one median incision, the results are all that is desired. When the right ovary is the one partially affected, a diagnosis of chronic appendicitis may be excusable, especially if the ovary is not palpable.

At each menstrual period there may be an acute exacerbation of an appendiceal inflammation because of the pelvic congestion and a dysmenorrhea with nausea, vomiting, and obstipation, etc. When adhesions are formed between the appendix and the adnexa the symptoms are distressing.

If a pyosalpinx exists or in a tuboövarian abscess there is more likelihood of the involvement of the appendix, an opening into the abscess cavity with drainage is of immediate benefit, but later a salpingectomy is essential, with an appendectomy for permanent relief.

In cases of tubercular infection, beginning in the right tube, there is soon an involvement of the peritoneum, the appendix, and ovary, with confusing symptoms. There is usually severe pain, low blood-count, moderate temperature, and the attack resembles a mild form of appendicitis. Later, the disease not only involves the appendix, ovaries, and uterus, but the intestines become greatly matted together, and relief is effected only when the primary seat of the disease is removed, including the appendix, cysts, tubes, and, possibly, the ovaries.

Ectopic pregnancy is quite frequently diagnosed as appendicitis. I have not been certain in four of my own cases before operating which condition I should find. All the others were diagnosed. If the case is seen early, possibly during an attack of pain, the low temperature, faintness, metrorrhagia and menorrhagia, with some possible fluctuation or soft mass in the pelvis, would

differentiate it from appendicitis. But from the fact that this condition is usually *right-sided*, in my experience, and that the case may be seen after a rupture has occurred and the temperature above normal, especially if there be infection, the diagnosis is not so simple.

In such cases I have learned to depend more upon the history of the case than upon examination. Cases complicated with pelvic adhesions, cysts of the ovary, and a peri-appendicular inflammation, present confusing symptoms. Three of my cases not positively diagnosed, were of this variety; a fourth had a large pelvic abscess.

I have not operated upon each case of ectopic pregnancy as soon as diagnosed, but have waited until the patient was over the immediate shock. In one desperate case, with numerous adhesions, ligatures controlled the bleeding, and a later operation cleared up the associated disease. By choosing the time to operate, and being conservative, I have saved all but one late case, namely, one coming to me with diffuse peritonitis and systemic infection.

A parasitic fibroid detached from the uterus and adherent to omentum, bowel, appendix, tube, or bladder, especially when to the appendix, is a somewhat rare condition, but should be thought of in considering a possible attack of appendicitis.

Chronic cystitis, with or without stones, occasionally gives rise to such diffuse pain as to resemble a typical attack of appendicitis; and if associated with stones in the right ureter, a careful investigation with the cystoscope, ureteral catheter, and *x*-rays should be made before a diagnosis is ventured.

The most puzzling cases are those where so many organs are affected that it is hard to pick out the greatest offender; for example, in women in whom there is a relaxed condition of the abdominal wall, resulting in vicerptosis and a dilatation of the stomach, also with disease of the tubes and ovaries and a tender appendix. Many of these cases are of a nervous temperament, either by nature or acquired as the result of the disease.

The pain, suffering, nausea, and vomiting, and also the distress of mind that these individuals endure, are beyond description. A careful analysis and proper estimation of the true significance of each symptom is indeed difficult, and the relation of cause and effect is hard to estimate.

I am of the opinion that, independent of the nervous symptoms, as many of the pathological or unnatural conditions should be connected as

is possible, consistent with the safety of the patient, endeavoring to select the route most suitable for the purpose, and the disease most important first.

Many of the nervous symptoms disappear after work of this sort. At operation the condition of all organs within reach should be observed and recorded for reference and benefit to the patient in future illnesses. The time for this additional investigation is of short duration, and the danger is almost nil. It will well repay one, I am sure.

In conclusion, I would say—

Any inflammatory disease within the abdomen primarily involving one organ, may, from continuity or contiguity, result in other tissues or organs being involved.

The blood-supply of the abdomen and pelvis is such that infectious microorganisms may be carried from one diseased organ to another, thereby starting a similar disease in a part through which this infected blood flows.

The lymphatics may also convey disease to organs in the line of their distribution.

The nerve-supply of the organs of the lower abdomen and pelvis and their sympathetic relationship are such that pain may be referred to localities not affected.

It is possible for more than one form of disease to exist within an abdomen simultaneously, and the symptoms become quite complex thereby.

Besides actual disease there may exist one or more misplaced organs, thereby changing the symptoms considerably in the presence of disease, or resulting in contiguous organs being affected because of this displacement.

Also the misplaced organ alone may cause distress that resembles some actual form of disease.

The character of the disease, the variety of each form of disease, the number of organs involved, the associated displacement of organs, the temperament, environment, and vocation of the individual sufferer, are all factors to be considered in summing up the case.

A careful personal history of the case, a thorough physical examination of the individual with the aid of chemical, bacteriological investigation, and a searching examination with all the apparatus at our command, e. g., the cystoscope, proctoscope, microscope, and *x*-ray, will clear up the majority of cases.

In certain cases, if no positive diagnosis can be made, there may be clear indications for operative interference to cure the disease.

In complicated cases a thorough search through a proper-sized opening should be made to terminate the symptoms complained of, and a record of all findings made for further reference

EMPYEMA PLEURAE*

By J. A. THABES, M. D.

BRAINERD, MINN.

In presenting this paper it is not my intention to offer anything new on the subject, but to try to bring out some of the most important features in the diagnosis and treatment of this very common affection.

The treatment of pyothorax dates back to the remotest antiquity, and marks one of the most brilliant eras of pre-Hyppocratic surgery. It is reported that Euryphon of Cindos saved the life of Cinesia by opening the chest-wall by actual cautery. In the Seventh Book of the History of Nature, Pliny describes the case of Paræus, who, after having been given up by his physicians, sought death on the battlefield, but when thrust in the chest by a spearman pus escaped from the wound, and the seeker of death recovered, having been cured by the weapon of his enemy.

There can be no doubt but that this condition was recognized by the earliest physicians and that various operations were performed by them, and it is reasonable to believe that they had some idea of asepsis for the preparation of a patient consumed several days, consisting of repeated cleansing of the body and also of the instruments to be used. But it was reserved for the great discovery, antisepsis, to elevate thoracotomy to the high position which it at the present time occupies.

Pyothorax is caused by the invasion of pus-producing bacteria into the pleura. Unless from a traumatic cause it is but seldom of an idiopathic character. The pleural surface with its epithelial lining does not offer a favorable soil for the development of bacteria under ordinary circumstances, on account of its ability to absorb them and carry them off by numerous lymphatic channels as well as by the alternating form of pressure exerted during the process of respiration. There is no other tissue in the body that offers so strong a resistance to invading organisms and can only be overcome by extreme virulence or great damage to normal structures.

Empyema is usually preceded by some other disease, such as croupous pneumonia, pleuropneumonia, pleurisy, tuberculosis, pericarditis, peritonitis, nephritis, osteo-myelitis, esophageal

and tracheal ulcers, appendicitis, and all the acute infectious diseases, particularly the grippe.

It is sometimes difficult for us to explain why it is that in the majority of cases of pleuritic effusion the fluid is absorbed and complete recovery takes place, and that in other cases we have pus formed as a sequel, and in this connection the writer has frequently noted that children are more liable to develop the latter condition than adults, due, no doubt, to the fact that their serous surfaces offer less resistance to invading organisms.

The bacteria most commonly the cause of pyothorax are the streptococcus, pneumococcus, and tubercular and influenza bacteria, but it is seldom that we find only one of the above germs present, for usually there is a mixed infection.

The diagnosis of pus in the pleural cavity is usually easy, but I believe a great many mistakes have been made and cases have been diagnosed as tuberculosis, especially in young children, and the true condition overlooked. The history of the case is of greatest importance; high and continuous temperature at the beginning, and later on intermittent and interrupted by chills, great exhaustion, rapid emaciation, headache, and dry tongue.

Inspection shows rapid breathing and, in long-standing cases, edema of the thoracic walls and bulging of the intercostal spaces. Percussion shows the neighboring organs displaced and marked dullness. The respiratory sounds are greatly weakened or entirely absent. The vocal fremitus is also weakened or absent. In cases of doubt no harm can be done by exploring with an aspirating-needle, provided strict antiseptic precautions are used. It is better to incise the skin before making the puncture, thus avoiding any infection from that source.

The treatment of pyothorax can be only surgical. Its principles are the same as apply to any case of large abscess, that is, thorough evacuation and drainage. This can be accomplished only by making large openings in the thoracic walls.

Aspiration has no place in the treatment of this condition and should be used only as a means of diagnosis. Simple incision without the resection of a portion of a rib or ribs, is not sufficient

*Read before the Upper Mississippi Valley Medical Society

except occasionally in young children with wide intercostal spaces. It is, however, sometimes best in cases of long standing where the lung has become contracted and adhesions formed, to aspirate as much of the fluid as possible a few hours before resection, allowing the lung to expand and thus break up some of the adhesions, as the intrathoracic pressure is much greater than after the chest-wall has been opened.

The incision is usually made in the median axillary line over the sixth or seventh rib, and a portion of those ribs resected, care being taken to dissect-out the ribs, preserving all of the pericosteum, and resect before the pleura is open, thus avoiding hemorrhage. It has been our practice to first secure good free drainage and allow the lung to expand as much as it will, thus giving the patient a chance to gain strength, and later to resect enough of the chest-wall to obliterate the cavity.

The healing process does not take place by granulation, but by distention of the lung and the falling in of the chest-wall. Where the pulmonic

pleura approaches the costal or, in other words, the lung touches the thoracic walls a portion of the distending lung-tissue adapts itself to the costal pleura, where it gradually becomes agglutinated by fibrinous adhesions. The cavity should not be irrigated except where there are solid masses present, or very foul pus. The irrigating fluid should be some mild antiseptic. If hemorrhage has occurred or the patient is suffering from shock, irrigations should be deferred for a day or two. Where the chest-wall has been opened freely it is not necessary to use drainage-tubes. It has been our practice to pack the cavity quite firmly with gauze at the time of operation, and after danger from hemorrhage has passed to use loose gauze packing or none at all.

Full anesthesia should be produced only if the pulse is strong, and this is an exception in cases of long standing. Chloroform is much safer than ether and should be given with extreme caution, and since the operation requires only a few moments to perform, it is sometimes best to use only local anesthesia.

PHYSIOLOGIC CHEMISTRY AND DIETETICS

CONDUCTED BY

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Instructor in Physiologic Chemistry, University of Minnesota

URINARY SECRETION

Sollman's "Review of Recent Work on the Mechanism of Urine Formation," lately published in the Journal of the American Medical Association, should be read by every student of internal medicine. It advances no new theories of urinary secretion, but it examines, with a judicial temper rare in the medical scientist, the several current views of recent experimenters, weighs their possible value, and sums up the conclusions which may be safely drawn from any sufficiently determined premises.

These conclusions deserve recital, not only for their presentation of what has been done, but for their indication of what there is still to do in this field of investigation. They may be condensed into the following terms:

While it has been proven that the renal glom-

eruli and the renal tubules in frogs are alike capable of excreting the normal urinary constituents, neither the interchangeable nor the distinctive functions of these two parts of the gland are clearly established in mammals.

The tubular epithelium is certainly capable of certain forms of excretion. Re-absorption by this medium is not proven, but it offers the clearest explanation of many phenomena.

Filtration through the glomeruli is physically possible and is probably a physiologic factor, but it does not sufficiently explain the composition of the urine.

Variations in the concentration of the urine, whether accomplished by secretion alone or by re-absorption also, are not explained upon any physical basis and require a secretory or selective process.

No satisfactory explanation has been given of the adaptation of the urine to the needs of the organism as a whole.

There is no binding evidence as to the mechanism of diuretic action. It is highly probable that the salts act physically and mainly upon the glomeruli, that phloridzin acts upon the tubules, while the diuretic influence of water, caffeine, and urea is obscure.

BEARD.

THE PHYSIOLOGIC BASIS

The clinician renders no better service to medicine than he does when he insists upon the physiologic basis of pathologic investigation. Dr. Charles Lyman Greene, of St. Paul, in his recent study of "The Diagnostic and Therapeutic Aspect of Gastric Ailments," renders just such a service in citing among the prerequisites of modern work—

"A thorough understanding of the chemical and physical changes associated with digestion ;

"A better knowledge of gastric motility and of the normal * * * variations in the size and position of the stomach ;

"A thorough knowledge of food substances based upon their chemical composition, caloric values, and effects upon gastric and pancreatic secretion."

Unfortunately, these prerequisites are not a matter of course with the average diagnostician and therapist of to-day. A broad revision of the physiologic chemistry of digestion has been necessitated by the researches of the very recent past ; researches which are still in progress to the point of necessitating, very probably, further revision in the near future. The premises upon which the diagnostic and therapeutic conclusions of yesterday rested, have shifted, and new conceptions of function demand new interpretations of symptoms and new measures of relief.

The Roentgen ray has afforded a means, far superior to inspection, palpation, and percussion, of determining the normal form, position, and excursions of the stomach. The observer has learned that the stomach is not a physiologic unit in the exercise of, but a single phase of, function ; that many changes of outline and place which the organ exhibits, some of which have been considered abnormal, are not extra-physiologic ; that many so-called dilatations are merely dislocations ; that some mal-positions are susceptible of physiologic correction ; and that disorders of mere motility are responsible for failures of function. The prevailing clinical methods do not, as yet, conform to these clearer conceptions.

But of no one of these physiologic prerequisites

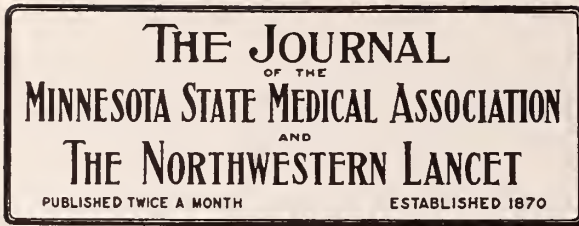
cited by Dr. Greene is the profession of medicine so much in want as of the practical knowledge of nutritive materials, with respect alike to their percentage-composition, their energy-value, and their specific influence upon secretion and digestion. A dozen years ago the study of dietetics was practically unattempted in medical schools. To-day it is seldom taught, save as a topic of occasional clinical reference, and still less often by efficient laboratory methods. The consequences of a faulty physiologic index to the treatment of stomach disorders have been deplorably self-evident. Gastric analyses are usually perfunctory and fail of any living interpretation. Fecal analyses are of rare attempt and rarer fruitfulness. The old typical test-meal cannot always give testimony to existing conditions in a stomach which is variably responsive to different types and combinations of food. The hydrochloric-acid index no longer points inerrantly to the conclusions it has been supposed to predicate. Drug therapy has failed most conspicuously in the gastric field, while surgical measures, which, in recognition of this medical failure, have been so actively exploited in the past few years, are not satisfactorily enduring the test of time.

Amid this general discomfiture, the signs are not wanting of the adoption of better methods of diagnosis and more rational, because simpler, measures of treatment, born of a new appreciation of the physiology and, therefore, of the pathology of the stomach. Among the remedial agencies which this new understanding of gastric functions suggests, no principle is of so large consequence and of so remarkable results as that of rest ; rest favored sometimes, by complete recumbency for a long period ; rest secured, locally, by a reduction of diet to the simplest nutritive materials compatible with nutritional equilibrium, by the exclusion of all food-stuffs to the digestion of which the stomach is temporarily inadequate, by the requirement of long intervals of time between the digestive acts, and by as perfect a removal of the debris of digestion and of any morbid gastric products as lavage, free water-drinking, and exercise of the gastric musculature will attain.

BEARD.

SYPHILITIC FEVER, WITH REPORT OF A CASE OF ECTOPIC GESTATION

Wm. H. Dukeman, of Los Angeles, describes a case of ectopic gestation that was diagnosed before rupture, and the diagnosis confirmed by the operation, which was successful in saving the patient's life.—Medical Record.



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APRIL 15, 1908

The annual meeting of the State Medical Association will be held at St. Paul, October 7 and 8, 1908.

THE AMERICAN MEDICAL ASSOCIATION MEETING

The annual meeting of the American Medical Association will take place in Chicago, June 2d to 5th. The preliminary program will be published in the Journal of the A. M. A., May 2, and the completed programs will be published later in pamphlet form.

Chicago expects, and will provide for, the greatest meeting ever held by the Association. Under the circumstances it will be wise to engage hotel accommodations as early as possible.

The various sections will meet at different places, as usual, but, so far as is possible, they will be centrally located. The headquarters will be at the Auditorium, a convenient starting-point for the section meeting-places.

The Chicago physicians have decided not to appear on the program with papers, but will be accorded the courtesy of opening discussions on topics in which they are specially interested.

A series of clinics, covering a period of three weeks, will begin immediately after the close of

the session and will doubtless attract a large number of physicians who are seeking post-graduate work. It is to be hoped that Chicago will present its visitors with endurable weather, as representative medical men from all over the country will be there to criticise or condemn.

The visitor must not forget the ceaseless labors of the various committees that have charge of work of the Association.

These details are not always appreciated, unless one has had similar experiences in the entertainment and comfort of a large body of strangers. Time and money are a necessity in this work. Physicians are required to attend frequent meetings of the committees to which they belong, and are obliged to give their personal time and attention in order to plan for a labyrinth of details. It costs a large sum to care for a meeting of the American Medical Association, and the money is raised by subscription through business men and friends of the profession. This is simply a hint to the wise: Accept your comforts or discomforts in the proper spirit, and remember you may some time be called upon to labor for your unappreciative fellow man.

PROPHYLAXIS OF VENEREAL DISEASE

There is too much carelessness and indifference on the part of physicians toward the contagiousness of venereal diseases. The ignorant public know but little of the pitfalls they should avoid, and the physician, seeing much of the effects of disease and uncleanness of the genitals, neglects to warn the unsuspecting victim of the dangers of communication or contraction of diseases that are responsible for chronic invalidism. The infecting party is often ignorant of his contagiousness and the possibilities of indirect infection of others. Frequently in the so-called latent period, when no appreciable manifestations can be detected, the greatest danger of communication is present.

Möller, in Hygiea, Stockholm, demonstrates from his large experience, that other local genital affections may predispose to syphilitic infection, especially herpes, condyloma, scabies, and relics of infiltrations or anything which induces a predisposition to defects in the skin. Hence, personal attention—individual prophylaxis—is extremely important. To accomplish this the knowledge of the subject must be disseminated among all classes. In many countries the public receives instruction by circulars through the public press, or by lectures from medical men.

If the dangers arising from the infections of syphilis and gonorrhea and their sequelæ, were taught under proper auspices, the information would be gratefully received, and many unexpected liabilities be averted. There is no reason for the suppression of this information other than false modesty.

Cleanliness can be taught in all kinds of schools, even to young children; and, if carried to higher grades, young men and young women may be warned of the dangers that beset them if they transgress the laws of hygiene and morality.

Unfortunately, the average teachers in our public schools and institutions of learning are as ignorant as the children under them.

Public sentiment and education can be so stimulated that venereal diseases can be reduced to the minimum. The horrors of infection from syphilis and gonorrhea, can be made as conspicuous as the after-effects of diphtheria, scarlet fever, and other communicable diseases, if presented by the sanitarian. The ignorant and poorer classes can be approached by easy stages through popular lectures from recognized medical authorities, and the information thus imparted may reach all classes and races.

If the public health league would turn their attention from the alleged dangers of vaccination to the real dangers of dirt and disease they would accomplish wonders.

The egotism of the would-be reformer does not permit him to immortalize himself in this way, he prefers to surround himself and his listeners by theories rather than by facts.

If the public-school inspection continues to show, in the future, the possibilities of disease and defects among school children an entering wedge for instruction in sexual hygiene will speedily follow. Boards of education may ultimately be persuaded to recognize the necessity of simple instruction in the direction of safe sexual life. If the public knew the present propensity of children and youths toward the sexual irregularities that exist in all public schools, many hands would be held aloft in genuine horror, and a demand for better things, would be an immediate cry.

and they are never seeking to build up their reputations at the expense of other men working along the same lines, nor are they chasing after stories that seem, temporarily, to militate against their fame.

When the Spanish-American war broke out, a lot of raw, undisciplined, and almost unmanageable troops were thrown into camps, and kept in more or less idleness. The sick-list was disgracefully large, and, as a result, American medical men suffered in reputation. Before the stories of their incapacity had fairly died out, the Russo-Japanese war was on, and off again; and the stories of the miraculous work of the medical department of the Japanese army began to reach this country. History furnished nothing to be compared with it. Every drop of water and every particle of food put into a Japanese stomach, had first to be examined under modern laboratory conditions; and every wound had better attention than it could have received in a modern hospital. And the result? Practically no mortality. The world was amazed, and American medical men, especially the men of our army, suffered seriously in reputation. But to the everlasting credit of these same men, no meed of praise was denied the Japanese, and, in fact, it was American medical men who sang their praises loudest.

But what is the sequel? It is perhaps seen to best advantage in a recent book from the Macmillan press. B. L. Putnam Weale has just given the world his fourth book on the Far East, and such a wealth of information regarding conditions growing out of the war between Japan and Russia, is nowhere else to be found.

Mr. Weale, in his first book on the East, written only four years ago, and from the field, expressed great admiration for the Japanese, and sometimes expressed it at the expense of the Russians. Since then he has seen more of the Russians, and gathered a mass of information that shows him to be a master of details and their orderly arrangement. He does not gloss over the incompetence of the Russian generals and statesmen, but he points out two things that were done during the war magnificently, and quite as well as they could have been done in any other part of the world. One was the management of the Trans-Siberian railroad, and the other, singularly enough, was the management of the army hospital service in the rear, particularly at Harbin, where the wounded were sent in great numbers. At the front, there was no system, either hospital or sanitary; and, moreover, there

MEDICINE A WORLD-WIDE PROFESSION

The men who have done, and are doing, things in medicine, surgery, and sanitation are, like all great men, modest and self-sacrificing;

was little or no attempt to maintain one. But in spite of this fact the death-rate from gunshot wounds was remarkably small, and there was an insignificant amount of sickness in the Russian army, while the sickness in the Japanese army became a serious menace to the army's success.

We believe these statements to be absolutely reliable, both because the writer has long maintained his reputation for reliability in gathering and stating facts, and particularly because the contradictory nature of the statements is easily explained, in fact is accounted for by the very conditions that existed. The hardy Russian was fighting in his own climate and under conditions natural to him, and so long as he was on the move, sanitary conditions took care of themselves. The Japanese, being on the offensive, were subjected to much the greater hardships, and being in a climate much severer than the home climate, inevitably suffered more from sickness.

We quote these facts, not in the least to disparage the work done by the medical department of the Japanese army, for we believe it reflected great credit upon all those in charge of it, and upon the Japanese nation; but the truth, now so slowly coming out, demonstrates—and the demonstration is needed over and over again—that conditions must always be considered in drawing conclusions.

American medical men, surgeons, and sanitarians are in the front ranks of the world's great men in these lines; and the work of bettering the condition of mankind suffers, at home and abroad, when confidence in these men is shaken by the manipulation of facts.

The truth is the thing we want and seek, and what ever story it tells, the medical profession will welcome it. The false conclusion, as well as the false statement, does harm, even infinite and lasting harm, and it must not be lightly passed over.

Medicine, surgery, sanitation, know no nationality. Any progress, in either branch, makes for the world's betterment, and will ever receive hearty welcome by all workers in this field, and there will never be stint of praise to the man who makes the least contribution to the world's knowledge of means to cure or prevent disease.

THE FIRELESS COOKER

Under the above name a very old device has been revived to meet conditions which have long demanded such an appliance. And what is this

so-called *fireless* cooker? It is simply a heat-proof box into which may be placed a pail or other receptacle filled with boiling water. As the box retains the heat in the water for several hours, food placed in the water is cooked without any more fire. Thus if oatmeal or any other cereal be placed in the cooker and left all day or over night, it is perfectly cooked, and becomes fit for human food, which it is positively not when cooked a half hour or less, as is usually done; and it is much less fit for food for children when so hastily cooked.

This device is equally serviceable for cooking vegetables and all kinds of meats. It retains all the juices and flavors, and prevents the escape of disagreeable odors. Its counterpart is the bean-hole of the woodsman's camp, famous for the lusciousness of baked beans thus prepared. It is the delight of the housewife who has even the occasional care of the cooking, for when a meal is put into the cooker, it needs no further care, and can never be injured by being left too long; in fact, no food can be overcooked in it. It soon pays for itself in the saving of fuel, to say nothing of the saving of labor.

It is not a patented device, and any ordinary mechanic, even a doctor who can use a saw and a hammer, can make one for himself; but this would perhaps not be profitable. At all events, no one should tolerate in his house one of the cookers with cloth pads, filled or otherwise, for they are unsanitary in the extreme. Nothing but asbestos should be used for insulation. While there are many good ones sold at moderate prices, probably the best one is made by the Minneapolis Wood and Machinery Co., of this city.

A series of articles, composed in the main of recipes for things cooked in the fireless cooker, is now appearing in *Good Housekeeping*, and are from the pen of a well-known writer upon cooking. We commend both these articles and the cooker to our readers.

BOOK NOTICES

PHYSICAL CHEMISTRY IN THE SERVICE OF MEDICINE. By Dr. Wolfgang Pauli, Privatdocent in Internal Medicine at the University of Vienna. Authorized translation by Dr. Martin H. Fischer, Professor of Pathology at the Oakland College of Medicine. First edition. New York: John Wiley & Sons, 1907.

This little book has the stamp of approval of Lewellys Barker in a "Prefatory Note to the

American Edition," and this should warrant its careful consideration by American physicians. Any one who has been following the progress of physical chemistry in the medical field will, however, not demand such a hall-mark for the work of Pauli.

The book contains a series of seven addresses, delivered by Pauli, between November, 1899, and December, 1905. The titles of the addresses are as follows:

1. On Physicochemical Methods in Medicine.
2. The General Physical Chemistry of the Cells and Tissues.
3. The Colloidal State and the Reactions that Go On in Living Matter.
4. Therapeutic Studies on Ions.
5. On the Relation Between Physicochemical Properties and Medicinal Effects.
6. Changes Wrought in Pathology Through Advances in Physical Chemistry.
7. On the Electrical Charge of Protein and Its Significance.

Pauli speaks with the authority of one who has had a part in the production of the subject, tempered with a reserve which gives a feeling of confidence to the reader. Especially interesting are the discussion of the colloidal state the therapeutic results which he obtained with the sulphocyanates, and the significance of the electrical charge of proteins.

Although some will regret that the work does not contain a bibliography, it will be found, by those interested in medical advance, to be a very interesting introduction to this comparatively new field.

Those conversant with the grade of work expected of a German investigator will find food for thought in the fact that the work of the humble "privatdocent" finds an American "professor" for a translator.

REPORTS OF SOCIETIES

MINNESOTA ACADEMY OF MEDICINE

The regular meeting was held at the Minnesota Club, St. Paul, Wednesday, April 1st. Dinner was served at 7 o'clock, and the meeting was called to order at 8:20, with 27 members present.

Dr. Arthur Sweeney presented clinically a boy, 12 years old, in whom a diagnosis of brain tumor had been made. The boy was operated upon by Dr. H. J. O'Brien, and a cyst was found. The opening and draining of this have greatly relieved the symptoms, and the boy has made a good recovery from the operation with but little evidence remaining of the brain disturbance. The

case was discussed by Drs. Ohage, Mann, and Sneve.

Dr. Sneve reported several cases of brain tumor, with operation, showing specimens and reading the case-histories.

Dr. A. T. Mann reported a case of adenocarcinoma of the rectum.

Dr. W. D. Sheldon reported a case of rheumatism with endocarditis, followed by death, in which a diagnosis was made of "Degeneration of the Bundle of His." The heart was shown with a fibrinous clot, which had formed directly over the bundle of His.

Dr. T. S. Roberts reported a case of a babe, twenty months old, who had swallowed a pair of truck-wheels from a toy-engine. He had considerable difficulty in swallowing them, but after due time they were passed per rectum without harm.

The hour being late it was decided to ask Dr. J. C. Litzenberg to read his thesis at the May meeting of the Academy, which he consented to do.

ARTHUR W. DUNNING, M. D., Secretary.

HENNEPIN COUNTY SOCIETY

A regular meeting of the Society was held on April 6th.

The president, Dr. F. A. Knights, occupied the chair, and 41 members were present.

Dr. C. N. Spratt presented three cases of mastoid disease, one of them complicated by valvular heart disease. Dr. A. E. Benjamin presented a case of bone tuberculosis of the foot.

The Censors having reported favorably the following named physicians were elected to membership: Dr. Mabel S. Ulrich and Dr. H. W. Allen. The names of the following were proposed for membership: Dr. Jens Ohnstad, 1854 Central avenue; Dr. Chelsea C. Pratt, 917 River Road Southeast; Dr. R. H. Kinney, Donaldson building. Dr. M. Russell Wilcox made application for reinstatement.

Dr. H. L. Staples, chairman of telephone committee, reported that some progress was being made.

Dr. A. T. Mann read a paper on "Some Observations in Regard to Symptoms and Diagnosis of Intestinal Obstruction." The discussion was opened by Dr. J. E. Moore and entered into by Drs. R. E. Farr, L. A. Nippert, H. L. Staples, D. Edmund Smith, A. E. Benjamin, G. Schwyzer, the discussion being closed by Dr. Mann.

Dr. H. W. Jones then gave a lecture, "Stere-

opticon Views of the Fiber Tracts of the Cord and Brain-Stem," which was discussed by Dr. Johnston.

C. H. BRADLEY, M. D., Secretary.

RICE COUNTY SOCIETY

The postponed annual meeting of the Society was held at Faribault on March 28th, with 17 members present.

Dr. F. S. Warren of Faribault read a paper on "Tumors of the Larynx," and Dr. C. W. Milkowski, of Faribault, read one on "Renal Calculi."

Five new members were elected. Dr. A. C. Rogers was elected president, and Dr. W. H. Rumpf was elected secretary and treasurer.

W. H. RUMPF, M. D., Secretary.

ST. LOUIS COUNTY SOCIETY

The Society met on March 12th, with 24 members present.

Dr. C. W. Taylor, of Duluth, read a paper on "Infant-Feeding," and Dr. F. A. Grawn read one on "Puerperal Eclampsia and Its Treatment, with Report of a Case."

The Society has opened a library in the New Jersey building, and begins with 18 magazines on its periodical list.

N. L. LINNEMAN, M. D., Secretary.

WRIGHT COUNTY SOCIETY

The Society met at Buffalo on April 6th with 6 members present. Dr. A. T. Mann of Minneapolis read a paper on "Some Remarks on Obstruction of the Bowels." The paper was fully discussed, and the meeting proved to be a very interesting and valuable one.

J. J. CATLIN, M. D., Secretary.

NEWS ITEMS

Dr. Sherman Brown, of Madelia, has moved to Jordan, N. Y.

Dr. E. J. French, of Plainview, has moved to Twin Falls, Idaho.

Dr. R. A. Scott, of Montreal, Canada, has located in Cavalier, N. D.

Dr. C. J. Montgomery, of Winnipeg, Manitoba, has moved to Neche, N. D.

Dr. O. B. Lundy has moved from Bottineau, N. D., to Willow City, N. D.

Dr. Wm. Scanlan, of Page, N. D., is doing post-graduate work in Chicago.

Dr. T. M. MacLaclan has moved from Bismarck, N. D., to Valley City, N. D.

Dr. J. W. Robertson was elected mayor of Litchfield last week for a third term.

Dr. B. S. Adams, of Hibbing, has been doing post-graduate work at Johns Hopkins.

The Catholics of Sherburn have started a movement to build a hospital at that place.

Dr. A. R. MacKay, of Bottineau, N. D., has been doing post-graduate work in the East.

Dr. F. A. Spafford, of Flandreau, S. D., is to spend three months in Europe in study and travel.

Dr. J. K. Ashburn, surgeon at Fort Lincoln, N. D., has been transferred to Fort Assiniboine, Mont.

Dr. W. B. Mowatt, of Walhalla, N. D., is in Chicago, engaged in post-graduate work in surgery.

Dr. Carl Scherer, who has been practicing during the past year in New Ulm, has moved to Ruthton.

Dr. P. D. McCarthy, of Kalamazoo, Mich., has become assistant physician in St. Mary's Hospital at McKinley.

Dr. Robert C. Farrish, of Sherburn, has been studying in the clinics of Drs. Murphy and Ochsner, of Chicago.

The Stevens-Benton Society will take action against physicians practicing in either county without a license.

Miss Freda Lundberg, a nurse in the Immanuel Hospital of Mankato, died last month of malignant scarlet fever.

Dr. J. J. Catlin has been appointed pension examining surgeon at Buffalo, in the place of Dr. J. P. O'Connor, who resigned.

Dr. John J. Langford, formerly of Green Isle, died April 4th in Paris, France, where he had been for some time for special study.

The cost of the new addition to the Red Wing City Hospital will be about \$120,000. The contracts for the work have been let.

The new Henrietta Brewer Memorial Hospital, of Helena, Mont., will cost over \$100,000. It will accommodate about 100 patients.

Dr. J. F. Jones, who formerly practiced in Fargo, N. D., died last month in Arizona, where he had gone on account of failing health.

Dr. Maude R. Williams, a recent graduate of the Wisconsin College of Physicians and Surgeons, has located at Devils Lake, N. D.

Dr. O. K. Winberg, of Lake Park, has planned for a year's rest. His practice will be in the hands of Dr. Peder S. Vistaunet, of St. Paul.

Dr. L. S. Moore, of Elk Point, S. D., has accepted a position as physician for the Homestake Mining Co., and will move to Lead City, S. D.

Dr. Henry Ulrich, of Minneapolis, has returned from London, where he spent several months doing opsonic work in the laboratory of Dr. Wright.

Dr. Helen Ryerson, of Brookings, S. D., has received an appointment in a sanitarium at Batavia, Ill. Dr. Ryerson practiced at Brookings for three years.

Plans are being drawn by Hancock Bros., architects, of Fargo, N. D., for the \$40,000 hospital building to be erected by the Sisters of Mercy at Devils Lake, N. D.

The citizens of Hillsboro, N. D., have taken steps to obtain a hospital for that place. At a recent meeting a committee was appointed to effect an organization.

Dr. James Lockwood, of Watertown, S. D., was married last week to Miss Gertrude Freeman of the same place. It is reported that Dr. Lockwood will locate in Henry, S. D., and build a hospital there.

Dr. Chester G. Higbee, the leading and oldest homeopathic physician of St. Paul, died on April 3d, at the age of 73. Dr. Higbee came to St. Paul in 1874. He was a graduate of Hahnemann Medical College of Chicago.

Dr. Kinji Takaki, the son of the eminent Japanese surgeon, visited the clinic of St. Mary's Hospital, Rochester, last month, and is being entertained by Dr. W. W. Mayo, who was so cordially received in Japan on his visit last summer.

The plans for the Litchfield Hospital building are about completed by the architect, Lowell A. Lamoreaux, of Minneapolis. Archie Robertson, a medical student who graduates from the State University this year, is president of the hospital company.

Drs. Corrigan and Corrigan, of Spooner, who are now conducting a hospital in inadequate quarters, will build a commodious structure this summer. The three villages of Spooner, Beaudette

and Rainy River are so near together the hospital will not lack support.

In our last issue it was stated that Dr. G. Oppler had moved from Beaudette to Spooner. He has been in Spooner all the time, but the Spooner people have had, until recently, their postoffice at Beaudette, just across the river. Spooner now has a postoffice. This fact got our chronicler mixed up.

The case against John Till for practicing without a license in Wisconsin was dismissed on a technicality. When Till returned to Somerset he was met by a great throng, said to number a thousand people, headed by a brass band. It is all typical of his methods and the fools that made up the procession.

At the annual meeting of the Commercial Club of Montevideo, held on March 3d, a motion was unanimously adopted that the chair appoint a committee to immediately proceed to organize a corporation for the purpose of building a hospital for Montevideo. The attendance was unusually large and the enthusiasm over the project was quite marked. Before the end of the coming summer Montevideo will undoubtedly be able to boast of a modern and well equipped hospital.

The Women Alumnae Committee, the Women's Medical Society of the State of Illinois, and the Medical Women's Club, each, wish to entertain the women physicians visiting Chicago at the meeting of the American Medical Association next June. As the session of the American Medical Association is so short, and the time so entirely filled, these three organizations have combined efforts, and hereby extend to all the women physicians who shall be in Chicago at that time a most cordial invitation to a banquet and entertainment to be given on June 2d, which is the evening that has been reserved for the special entertainment of the visiting alumnae. At this banquet a special feature will be made of the reunions of the alumnae of the different colleges. The College Club in the Fine Arts Building, 203 Michigan avenue, will be exclusively at the disposal of the medical women during the meeting of the A. M. A., and will afford a place for all to meet, lunch, and visit together.

APPOINTMENT OF INTERNES

Members of the senior medical classes of the State University and Hamline have received appointments to internships as follows:

City and County Hospital, St. Paul.—R. A. Beck, Charles Hensel, and J. F. Walker, of the

State University; Wm. Eichler and Edward Schons, of Hamline.

St. Joseph's, St. Paul.—William Maertz, of the State University.

Mounds Park, St. Paul.—H. E. Dahleen, of the State University.

Bethesda, St. Paul.—John Esser, of the State University.

St. Luke's, St. Paul.—E. J. Johnson, E. A. Lawrence, and George Walker, of the State University.

Luther, St. Paul.—W. H. Hollands and S. G. Wright, of Hamline.

City Hospital, Minneapolis.—A. E. Bostrom and Dennis Ryan, of the State University; Inar Johnson and G. F. Schmidt, of Hamline.

St. Barnabas, Minneapolis.—M. S. Nelson, of the State University; Stanley Kerrick and Clay Albert, of Hamline.

Asbury, Minneapolis.—A. W. Robertson, of the State University; and Earl Dezell, of Hamline.

St. Mary's Minneapolis.—Edward Kennedy and R. J. Kingsley, of Hamline.

Swedish, Minneapolis.—C. J. Bloom and F. E. Engstrom, of the State University; and R. G. Olson, of Hamline.

Northwestern, Minneapolis.—A. C. Strachauer, of the State University.

John Buckley, of the State University, goes to a hospital in Portland, Oregon; George Eusterman, of the State University, goes to *St. Mary's*, Rochester; W. P. Nelson, of Hamline, goes to *St. John's*, Fargo, N. D.; H. H. Hall, of Hamline, goes to *St. Mary's*, Superior, Wis. Four students of the State University, whose names will be announced later, go to the *State Hospital for Insane*, at St. Peter.

SUBSTITUTE WORK WANTED

A Hamline senior who has an appointment in the City and County Hospital of St. Paul, beginning Dec. 10th, desires substitute work after graduating until Dec. 1st. Address E. S., care of this office.

PHYSICIAN WANTED

A resident of Minneapolis, registered in Minnesota, who can devote part of his time to special work. For a few months would want all of his time. Must have had at least two years of general or hospital practice. Address I. M., care of this office.

PHYSICIAN WANTED

Exceptional opening for wide-awake German

physician. The best, old-settled farming section in this big, wide world. Nothing to buy. Move right in and go to doing business. For particulars write or telephone Buzzell Drug Co., Janesville, Minn.

POSITION WANTED

A graduate nurse, experienced in surgical work and the administration of anesthetics, who has been superintendent for several months of a small hospital, desires a similar position, preferably in Minnesota; or would act as general assistant. Address D. C. D., care of this office.

PRACTICE FOR SALE

In a village of 500 inhabitants in the west central part of Minnesota, thickly settled, rich farming country surrounding; no other doctor in town; a good drug-store in town. The reason for leaving is that I want to move to the city and go into partnership with my brother. For further particulars address M. C., care of this office.

FOR SALE

In southern central Minnesota, an established and unopposed practice, worth from \$2,000 to \$2,500; may be increased; population of village 500; Americans and Germans; thickly settled country. Price, \$1,200 cash, which is less than cost of outfit, as follows: Office furniture, safe, operating-table, static and x-ray machines, nebulizer, tank, MacKenzie condenser, cautery, driving outfit, some household goods, etc. Collections over 95 per cent. Reasons for selling: After doing post-graduate work, am going to city. Do not answer unless you want to buy. Address, C. E., care of this office.

TO THE PROFESSION—X-RAY LABORATORY

I have a well equipped x-ray laboratory, rooms 214-218 American National Bank Building, corner Fifth and Cedar streets, and am prepared to do your radiographic or Roentgen-ray therapeutic work.—W. S. FULLERTON, M. D., St. Paul, Minn.

PHYSICIANS' ATTENTION.—Drug-stores on easy payments, etc. Drug-store positions, United States or Canada. F. V. Kniest, Omaha, Nebr.

SPECIAL NOTICE

The Roster of the Minnesota State Medical Association will appear in our next issue. Members of the Association who fail to pay their dues to their county societies will not receive THE JOURNAL-LANCET.

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No.

THE DIAGNOSIS AND TREATMENT OF EXTRA-UTERINE PREGNANCY*

BY GEORGE C. BARTON, M. D.

MINNEAPOLIS

The process of evolution in medicine is nowhere better shown than in the literature of the last twenty years on ectopic pregnancy. In 1888, at a meeting of the American Association of Obstetricians and Gynecologists, Baldy said: "The diagnosis I consider beyond the reach of man, and never expect to see the time when it can be made with certainty and accuracy." Baldy has lived to see the day when the diagnosis can be made in a large percentage of cases, either before rupture, at the time of rupture, or after rupture. That it is possible always to make the diagnosis with certainty I do not believe, for the reason that the cases are not always typical. Women who are normally pregnant do not all present exactly the same symptoms, but in all pregnant women there are certain characteristic phenomena that make a probable diagnosis possible. So with ectopic pregnancy, all cases are not typical, but all cases present features enough in common that a probable diagnosis may be made. In the following case the diagnosis was made by Dr. D. O. Mork, of Hills, Minn., a young man not yet a year in practice.

Mrs. S., an intelligent German woman, forty years of age, had one child nine years old, but since that time had not been pregnant. Some time after her baby was born she had had a trachelorrhaphy done. She gave no history of

ever having had any pelvic inflammation. She came to consult the doctor on account of a prolapsus. She said she had always been regular until July of this year, when she missed her regular period, which should have been on July 15th. She commenced to flow, however, two weeks later, and this flow had continued more or less all the time up to the time of operation.

About the middle of August she went away on a visit, and while on the train was taken very sick and had severe pain in the abdomen, which she referred to the region of the stomach. She had to leave the train at the first town she came to, and call upon a physician. She believed, and the physician she consulted believed, that the attack was due to something she had eaten. As she put it, she thought she had been poisoned. With this exception she had had no pain. I saw her on October 12th, and on examination found a mass, somewhat fluctuating, on the right side and made the diagnosis, or rather confirmed the diagnosis of Dr. Mork, and advised operation.

On October 14th we opened the abdomen, and found on the right side a cystic ovary and an enlarged tube with closure of the fimbriated extremity. The tube looked dark in color as though it contained blood. It was surrounded by a few fine friable adhesions, which broke up very easily. I removed both tube and ovary without rupturing the tube, and here show you a picture taken by Dr. Corbett of the tube and ovary as it appeared

*Read before the Western Surgical and Gynecological Society, December 30, 1907.

after removal. I then examined the left side, and found a similar condition on this side, except that there was not a cystic ovary. This tube ruptured on taking it out and quite a little dark blood escaped, and some clots. Dr. J. Frank Corbett, of Minneapolis, the pathologist, who examined the specimen for me, reported that in the left tube there was an ectopic pregnancy beyond doubt, although no fetus was found. The size of this tube would preclude the idea of this being a four-months pregnancy. It would, however, be about what you would expect to see in a two-months tubal pregnancy; so that something took place which arrested the pregnancy in this tube when she had the sick attack in August, probably a partial rupture with hemorrhage into the tube. The right tube was distended with serous fluid mixed with blood. It has been a question in my mind whether this was simply a case of hydrosalpinx. It did not have the microscopic appearance of a hydrosalpinx, nor were the adhesions such as we ordinarily find in a hydrosalpinx. The entire absence of any history of a former pelvic trouble would indicate that this was of recent origin. If so, why should it occur at the time of an ectopic pregnancy on the left side? Is it possible that there was a pregnancy on the right side also, which had terminated at or about the time of the rupture of the left side and that nature had so completely removed all the evidences of the pregnancy? These are questions which have presented themselves to my mind, but I am unable to answer them. It is this that has made the case one of more than ordinary interest.

The diagnosis of ectopic pregnancy should be presented in such manner as to arrest the attention of the busy general practitioner, who has the whole field of medicine before him and is expected to be correct in his diagnosis in all. The patient suffering from an ectopic pregnancy, as a rule, consults her physician for one of two symptoms, some abnormal condition of her menstrual flow or pain, or both. From my own experience, and from what I have gleaned from the literature, I am convinced that irregularity in the menstrual flow is the most constant symptom. In ectopic pregnancy before rupture there is one of three conditions of the menstrual flow:

First, the patient having been regular, misses her period for one, two, or more weeks and then flows. This flow is not normal either in character or time of its continuance. It may continue as a sort of dribble for weeks, and at no time is as excessive as the flow of a threatened abortion.

Second, there is amenorrhea, which continues until rupture takes place.

Third, there is no change in the menstrual function.

Of these three conditions the first is the most common. Add to this the history of the opportunity to become pregnant, with pain, referred to one or the other ovarian regions, and to this add the other symptoms of pregnancy, such as morning-sickness with changes in the breasts, and some of the nervous phenomena common to pregnancy, and the probable diagnosis would be ectopic pregnancy. I think this would be justifiable even in the absence of pain.

In this description, I have not mentioned as an indication the fact that the patient may have gone a number of years without becoming pregnant, for I think this occurs in so small a percentage of cases that it rather misleads than aids in making the diagnosis. If the physical examination now reveals some bluish tinge to the mucous membrane of the vulva and vagina, an enlarged and softened uterus, and an elongated, tender, semi-fluctuating mass on one side, with pronounced arterial pulsation in its region, the probable diagnosis can be made positive. If the patient consults her physician with the second condition, that of an amenorrhea for one or two months, she either desires his opinion as to whether he thinks her pregnant, or else it is because she has been having pain in one or the other ovarian region, paroxysmal in nature and described by some as being colicky. If the physical examination reveals the same condition described above then the diagnosis is ectopic pregnancy. If the third condition is present, which I believe is rare, the patient consults her physician on account of pain, and here again, if the physical examination reveals a condition similar to that described under the first heading, I believe a diagnosis of ectopic pregnancy is justified.

It may be difficult to make the diagnosis between normal pregnancy with some enlargement of the tube or ovary on one side and an ectopic pregnancy. A careful study of the history will usually reveal whether there has been at any previous time an infection of any kind; also whether or no this pain in the region of the ovary has been of recent origin or of long standing. The fact is that in salpingitis both tubes are nearly always affected and pregnancy is not likely to occur. These points usually clear up the diagnosis.

Pregnancy in a displaced uterus may simulate an ectopic pregnancy. It is usually not difficult

to make out a displacement, and replacing the uterus will show the nature of the condition. Pregnancy in a bicornute uterus may baffle our skill in making a diagnosis, but usually some septum in the vagina or cervix will indicate the nature of the trouble.

In ruptured tubal pregnancy, there are the symptoms of pregnancy described above followed by the sudden onset of severe pelvic or abdominal pain, which usually comes on after some exertion, such as lifting or straining at stool, accompanied with evidences of hemorrhage, which is alarming and sometimes fatal. The symptoms of hemorrhage are sudden, acute anemia, weak and rapid heart, dyspnea, sighing respiration, and, it may be, syncope. The temperature is either normal or subnormal. The abdomen is tender to the touch, and vaginal examination reveals an indefinite mass in the pelvis which is extremely tender. If with these symptoms there is found a little flow with the casting off of uterine decida the diagnosis is plain. A ruptured pyosalpinx might be mistaken for ruptured ectopic pregnancy, but we have the history of previous infection to guide us. The pulse is not usually so rapid or so weak. The temperature is accelerated from the beginning. Pain is less intense and is continuous, and symptoms of hemorrhage are absent. Hemorrhage into an ovarian cyst may simulate ruptured ectopic pregnancy. A pre-existing tumor, without any of the symptoms of pregnancy and without flow or the casting off of a decidual membrane, will be sufficient to exclude ectopic pregnancy. A pelvic hemocele, the result of a ruptured tubal pregnancy, may not be unlike pelvic peritonitis and cellulitis; but here, again, the history of infection with fever and the feel of a harder mass in the pelvis, with the absence of any of the symptoms of pregnancy or the rupture of an ectopic pregnancy, point to the diagnosis, which can usually be made without trouble. The same thing is true with uterine and ovarian tumors. The history shows the absence of pregnancy or of the rupture of a tubal pregnancy, and the physical examination will reveal a mass sharply circumscribed and mobile, which is unlike that of an hemocele.

To take up the diagnosis of later extra-uterine pregnancy would make my paper too long, so I have confined my discussion to the diagnosis of early cases, as these are much the more important clinically.

The treatment of extra-uterine pregnancy at any stage is surgical, notwithstanding the fact that but a few years ago some of the leading

gynecologists were advocating the use of electricity for destroying the fetus. Montgomery, in a paper read at the meeting of the American Association of Obstetricians and Gynecologists, in 1888, said: "While my subsequent study of the subject has not induced me to depreciate the value of surgery, it has caused me to have a higher appreciation than I before held of the possibilities of treatment by electricity." Electricity in this as in some other gynecological conditions has had its inning, but no longer has a place in the therapeutics of extra-uterine pregnancy.

If the diagnosis of an extra-uterine pregnancy is made before rupture, there can be no question but what the patient should be advised immediately to have the mass removed, this for the reason that so large a percentage of mortality follows in the unoperated cases.

Whether the mass should be removed through an abdominal or a vaginal section, I believe should be left to the individual operator. Personally, I can see no advantage in selecting the vaginal route, and therefore I always select the abdominal.

I do not wish to consume the time of this Association in discussing the technic of the operation. If the patient is seen for the first time at the time of the rupture, the question of when to operate is one that presents itself. On the one side, we have the men who advocate operating immediately, because the chief indication is to stop the hemorrhage, which is endangering the woman's life. On the other hand, we have those entitled to equal consideration who believe it is not for the best interest of the patient to operate upon her during profound shock following rupture. I believe, with the latter class, that with the use of proper judgment in the majority of instances more lives would be saved if we waited for a few hours until the period of shock was over. I have never believed that the condition of shock in which the patient was found was entirely due to the hemorrhage. I believe it is largely due to the severe pain the patient suffers, combined with the fear of dissolution caused by so sudden and violent an attack. I believe this, in the first place, because the shock comes on so soon after the attack that the patient has not had time to have lost blood enough to put her in the condition in which she is found; in the second place, because we know in other conditions patients suffer profound shock from pain and mental anguish; and, third, because so large a percentage of cases rally from their shock when the pain has been relieved by the use of morphine

I have been very much interested in the experiments performed by Hunter Robb upon dogs for the purpose of giving us some definite information as to the effects of an abdominal hemorrhage. I am convinced that his conclusions are reasonable and correct. I well remember the statement made to me by Joseph Price at one time when I was at his clinic. He said: "I have just seen a case of ruptured extra-uterine pregnancy. I refused to operate because the patient was in profound shock. I told them that I would not operate now, for if I did she would die, but that she would rally in a few hours, and I would then operate." This statement was made with so much confidence in what he said that I thought he must have good reasons for making it. This is the method I have always followed, and, up to the present time, with no regrets.

While my experience is not as large with these cases as that of some men, yet, in a series of about fifteen cases, I have had no deaths. The practice I have followed when seeing a case of this kind is to immediately give a hypodermic of morphine and atropin. This relieves the pain and quiets the nervous condition of the patient. I have always

followed this by a hypodermoclysis of normal salt solution, eight ounces or more, under each breast if necessary. This latter I know is subject to criticism, and yet I do not believe that the objections to its use are based on good and sufficient reasons. If the blood-vessels were rigid tubes then the more poured into them the more will run out, but, instead, they very quickly accommodate themselves to slight variations in the quantity of blood they contain. The effort to bring about a normal fullness of the blood-vessels does not increase the danger of hemorrhage, because it gives a more nearly normal tone to them.

When the patient rallies, the abdomen should be quickly opened and the bleeding stopped by clamping on either side of the mass. The abdomen should then be cleaned out, the mass removed, ligatures applied, the clamps removed, the abdomen filled with normal salt solution, and the abdominal wound closed. If, instead, the patient has not been operated upon at the time of rupture and a hematoma has formed, the symptoms indicating that it had become infected, then a vaginal opening should be made, the clots cleaned out, and drainage introduced.

TACT IN THE PRACTICE OF MEDICINE

By A. D. HARD, M. D.

MARSHALL, MINN.

Tact in the practice of medicine is what the pneumatic tire is to the automobile. It enables you to glide smoothly disregarding the otherwise irritating obstructions in your pathway, and brings you smiling to the successful end of your journey. Tact makes rough roads appear to be smooth, and covers up difficulties like the sugar-coating on a bitter pill. Tact is a mighty factor in achieving success for those who depend upon the gracious favor of their fellow men for patronage. The possession of tact makes a man a diplomat; the lack of it makes him a miserable failure, irrespective of other ability. Tact swings the door open to success when merit cannot even turn the knob. Tact is lauded as a virtue by the philosopher, the theologian, and by woman; yet, in truth, it is the very essence of deceitful subterfuge.

It has been said of mankind that they are divided into three kinds of liars: the diplomat, the book-agent, and the common prevaricator. The physician is not classed.

The subtle manipulation of tact robbed the Japanese of the conqueror's reward, and practically turned victory into defeat. The insinuating book-agent has left the evidence of his tact cumbering your book-shelves. The shining instances of success in ordinary walks of life by men less worthy than the average, indicate the use of tact by the common prevaricator.

In medicine, tact, with bread pills, will cure more diseases, accumulate more wealth, and achieve greater fame, than the acme of modest ability combined with the balance of the pharmacopeia. In politics tact will place a non-competent in office with a wild hurrah, while the lack of it inevitably consigns an honest candidate to oblivion. With but few exceptions, those who can be tactful are crowned with glory, rewarded with wealth, and have a bright prospect of a warm reception in the world to come.

The changing colors of the chameleon form

an interesting object-lesson of tact in nature, apparently stamping with divine approval the use of tact. The hysterical patient may be quickly soothed into pathologicless repose by tact, when the bromides waste their antineurotic inhibition, like fragrance on the desert air. Tact will pleasingly mislead the confiding nature of a little child, and materially assist in carrying it successfully through critical periods of disease.

By tact we secure the cheerful, helpful, and potent co-operation of our patient, which adds psychic power to our material armamentarium for fighting disease. By tact we overcome apparent idiosyncrasy to remedies which otherwise might seriously interfere with proper treatment of the case.

By tact we retain control of the vacillating patient who tends toward drifting around in vain search for magic effects to his own serious detriment. By tact we satisfy the easily disgruntled patient and rob him of a makeshift excuse for not paying his honest bill. Tact

is also used for other purposes by members of the medical profession. By tact the physician's wife may add very materially to his success in building up a practice. By tact he can adroitly undermine the patronage of his brother physician while he greets him with a smirk and shakes his hand with cordiality. By tact he can get his name and portrait (without his consent) into public print with great personal advantage. By tact he can wield his friends to serve him faithfully without hope of reward, and smilingly disarm his enemies to a standstill.

To use tact is to dissemble to secure an end in view. To use tact is to resort to subterfuge to accomplish a purpose. To use tact is to be two-faced, concealing one lest it betray the exact truth. And yet tact is popular, commended by all, condemned by none, and is a potent factor in every achievement in life, whether it be religious, philosophic, educational, or civic. To a small extent tact can be cultivated, but tacticians, like poets, are born, not made.

CARDIOSPASM: A FUNCTIONAL STENOSIS OF THE ESOPHAGUS AT THE CARDIA

BY OLIVER R. BRYANT, M. D.

MINNEAPOLIS

History.—The history of these cases is usually short, combined with that of neurasthenia. The patient may complain of some distress after meals with acid eructations and belching of gas, especially while eating.

Physical Examination.—Patient is of nervous type, even a pronounced neurasthenic, emaciated or poorly nourished; face is drawn and anxious. On deep digital pressure, a tender point is noted at the end of the ensiform. The stomachs slightly or greatly enlarged. Just above the cardia an area giving the true stomach tympany will be found, thus giving the stomach an hour-glass outline. The apex of the heart may be forced upward and outward. This second tympanitic area is a pouch formed by the pressure of ingested materials collecting just above the cardia.

Symptoms.—After a period of six months or a year from the onset of digestive disturbances,

the patient will be seized with a severe, suffocative pain referable to the epigastrium and radiating upward to the neck. These pains are intense, of a cramp-like, suffocative nature, and bear no relation to meals. The patient will usually put his hand on a spot about the end of the ensiform and complain of tenderness on pressure at this point, and the sensation of a large amount of gas in the stomach. In the early stages this pain is relieved by drinking a small quantity of hot water. This condition is associated with vomiting immediately after swallowing food or water. At first this may take place with only one meal a day, especially the last one, but later with every meal. Then the patient will vomit between meals. This vomitus will consist of mucus which does not contain any of the digestive ferments or hydrochloric acid, but may contain a small portion of undigested food swallowed at the previous meal.

The vomiting is easy; the patient lowers the head and, with little effort, raises from six ounces to a pint of mucus and undigested food. He will demonstrate his ability to vomit at any time by drinking one or two glasses of water, depending on the capacity of the esophagocele which has formed at the lower end of the gullet. During this time the patient rapidly loses weight, and the most extreme emaciation is seen in these cases, closely simulating the picture seen in malignant disease of the esophagus.

Diagnosis.—Cardiospasm must be differentiated from—

1. True stenosis of the esophagus, due to malignant disease, within or outside of the canal.

2. From stenosis, due to cicatricial tissue following ulcer in the esophagus or in the stomach near the cardia.

3. From a diverticulum.

From malignant disease at the cardia, the history of trouble for a year or over before definite symptoms arise, with sudden onset of severe cramp-like pain, absence in the vomitus of all elements found in malignant diseases, excess of HCl in the stomach-contents obtained with the tube, and the immediate improvement under appropriate treatment, would eliminate sarcoma or carcinoma. From sarcoma of the mediastinum there are no dyspnea, no area of dullness under the sternum, and no cough.

From true stenosis, due to cicatricial tissue. If due to an ulcer, the symptoms of ulcer would have been present previous to the present condition. If due to ulcer in the canal, the bougie or stomach-tube would locate it above the cardia.

Diverticuli are rare in the esophagus. Distress is complained of higher up, near the neck, the stomach is not implicated, and the probe is arrested a short distance down the canal or may pass readily into the stomach. After ingestion of large quantities of bismuth mud, the x-ray will show the pouch high up and outside the line of the canal.

Treatment.—Gradual dilatation of cardiac ring and appropriate attention to the neurasthenia. First, try a medium-sized tube, which, with care and deep-swallowing by the patient, may pass into the stomach. When the tube is introduced into the canal and reaches the esophagocele, large quantities of gas will escape, which may lead the operator to think he is in

the stomach. The contraction may be so intense that nothing will pass but a swallowed thread, then a filiform, care being taken not to use too much force and penetrate the wall. The filiform will relax the ring and open the way for a tube. If not, use an olive-point on a flexible wire, long enough to reach into stomach. With moderate force this will pass. To obtain a dilatation greater than anything a patient can swallow, a special apparatus has been arranged by Plummer, of Rochester, consisting of tubing with a rubber bag on one end and a "Y" on the other end—one piece to attach to water supply and the other to the gauge. The bag is inserted just through the ring, and water is turned on. Any pressure desired may be obtained as indicated by the gauge on the other fork of the tube. In this way the dilatation may be graduated. A hyperacidity is found in all these cases, which may be overcome by olive oil given before meals, at first through the tube and later, when food can be swallowed, by mouth. The large esophagocele works against natural deglutition, as it reduces the contractile force usually applied to the food at this point. Feeding for the first month should be almost entirely by tube and may consist of anything that will pass through the tube, using the largest tube, removing the rubber funnel and replacing it with an ordinary tin funnel. If the tube blocks, the patient can strip it, thus breaking up chunks and forcing food through. Dilatation with a bougie or rubber bag should be at least once a week for a period of six months to a year.

Prognosis.—The prognosis is good.

INTRAPERITONEAL HEMORRHAGE

Hiram N. Vineberg, of New York, believes the time has come for a careful consideration whether immediate operation is necessary in cases of tubal abortion or rupture in extra-uterine pregnancy. In the vast majority of these cases it makes little difference whether the operation is done at once or after a few days. It is only in rare cases of enormous hemorrhage that immediate operation is demanded to save life. Here the amount of blood in the peritoneal cavity endangers life by pressure on the heart and lungs through the diaphragm. Prompt operation combined with intravenous infusion will here do wonders in life saving. The author does not defer operation more than three or four days in any case of ectopic pregnancy in which the diagnosis is established.

THE JOURNAL
OF THE
MINNESOTA STATE MEDICAL ASSOCIATION
AND
THE NORTHWESTERN LANCET
PUBLISHED TWICE A MONTH ESTABLISHED 1870

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SUBSCRIPTION, \$2.00 A YEAR

W. L. KLEIN, PUBLISHER

839-840 Lumber Exchange.....Minneapolis

MAY 1, 1908

WHO IS WHO? SEE THE ROSTER

As all of our readers no doubt know, there is a very famous book entitled, "Who Is Who?" It is the repository of much curious, and also of much valuable, information, as it gives the name of practically all the men in this country who do things. That there are the names of many nobodies in this book, goes without saying, for there can be no very exact standard of selection.

Every state medical association has such a book in the form of its roster, and if the standard of selection is not overlooked, it may be said that the list contains few or no unworthy names, and it may be said, by the same standard, that there are very few names of worthy men in the state that are not on the roster. A medical man should join his county and state societies for certain well-defined reasons, chief of which are the following:

1. That he may help to advance the interests of the profession.
2. That he may obtain a certain indispensable training that comes alone from contact with men of his profession.
3. That he may contribute to his fellow practitioners the fruits of his experience.

The man who denies the obligation resting

upon him under either of the above heads, is an unworthy professional man, and is very likely to be an unreliable one. The truth of this statement is so self-evident we shall offer no argument to prove it.

The list this year shows a gratifying increase, and when the names of the slow ones come in many of the county societies will show a larger list than at any time in the past.

THE JOURNAL-LANCET will not be sent beyond this issue to members who have not paid their annual dues, and it is not probable that back numbers can be supplied, in case they are called for.

We freely grant that a few of our good men grow weary of the strife to keep up the local society, and so they drop out, usually for a short time only, of both state and local bodies. In this way, and through neglect to pay their dues, quite a good many names are omitted from the roster of our State Association when published, once a year, as in this issue of THE JOURNAL-LANCET, but these men will soon forward their dues, and their names will be registered by the secretary.

MEETING OF THE STATE BOARD OF HEALTH

The regularly quarterly meeting of the State Board of Health was held at the state capital on April 14th, when a large amount of business was transacted. The Executive Committee meeting, which takes place a few days before the regular Board meeting, prepares a schedule for consideration and consultation. It might be well for the physicians to know what subjects are covered, in order that the local boards of health may be upheld in their efforts, however distasteful they may appear.

Arrangements were made to furnish free vaccine for the local health-officers to use in emergency work. Of course, it is distinctly understood that the vaccine is to be used when an epidemic prevails, to protect those who have been exposed.

A conference with the superintendents of all of the state institutions, is to be held on May 1st, to consider such matters of detail as will be of mutual benefit.

The State University came in for its share of criticism and commendation. Various complaints of the smoke nuisance on the University campus and at the Agricultural School, were received and transmitted to the proper authorities.

Vaccination of University students and the establishment of a swimming-pool in the Armory building created a stirring discussion. It was disclosed that the construction of a swimming-pool was in progress, and that the tank was to be emptied *once a week*, after 1200 students had had an opportunity to test its delights. This suggestion did not appeal very strongly to a board of medical men. Shower-baths were suggested in place of the pool, or plans to change the water in the pool daily were advised.

Complaints were heard about a filthy slaughter-house, an odor-bearing rendering-plant, and the pollution of a lake. The slaughter-house was ordered closed, the rendering-plant was given thirty days to abolish the nuisance, and the lake was ordered under protection.

The school for embalmers was endorsed, and licenses provided for sanitarians and sanitary inspectors. These schools are to be established in connection with the State University, the former being self-supporting; the latter is to be one of the regular courses at the University.

Regulations covering diphtheria are under consideration; vaccination is encouraged; smallpox patients are protected; and the unvaccinated who belong to smallpox families are to be quarantined until vaccinated; sanitation of schools and state institutions is to be presented to the proper authorities.

The work of the State Tuberculosis Association relating to tuberculosis was endorsed and means provided for tuberculosis exhibits throughout the state.

The water-supply for cities is being investigated by the laboratories, and the work of Professor Bass, the engineer of the Board, is being pushed as rapidly as possible.

Social hygiene from an educational standpoint was endorsed as of as much importance as the stamping out of tuberculosis.

These are a few of the items which are the work of the Board. Others of equal importance are freely discussed. Many reforms would be inaugurated if the financial condition would warrant, but until the legislature shall provide more liberally, much of the work must be delayed.

A MAN WORTHY THE OFFICE

George T. Simpson, the present First Assistant Attorney-General, has announced his candidacy for the nomination for the office of attorney-general. This is in view of the fact that Mr. Young, the present Attorney-General, has become a candidate for the office of governor, and will

not again seek a nomination to the office of attorney-general.

Mr. Simpson was born at Winona and is a graduate of the State Normal and other schools of this state. Further than that, he has a university education, classical as well as technical. Prior to his becoming Assistant Attorney-General Mr. Simpson had been honored with many offices of trust, among others, city attorney of the city of Winona and county attorney of that county. He comes of old Republican stock, his father being the late Hon. Thomas Simpson, of Winona, one of the territorial pioneers of this state and actively engaged in its public affairs throughout its entire history. If training and experience count for anything in politics, it will be conceded that Mr. Simpson should receive the nomination and the office to which he aspires. Further, during the time that he has been Assistant Attorney-General he has been in close and constant touch with all matters pending before the legal department of the state. He is for that reason particularly well qualified to carry on to completion, along the same lines, any unfinished matters. Again, his experience in the office of the Attorney-General has given him an insight into the affairs of the different departments and their respective functions which cannot help but be of great value to the state in the event of his election. The editor, as a member of the State Board of Health, knows whereof he speaks, and it is safe to say that, if nominated and elected, Mr. Simpson will be able to give the office of attorney-general of this state an administration which will be entirely satisfactory to the people of the same.

The important factor which prompts this editorial is the active and the virile interest Mr. Simpson takes in matters which are of special importance to medical men. He is interested and is a student in everything that pertains to sanitation and toxicology. He has been the advisor of the State Board of Health and has passed upon all the rules and regulations that have to do with the safety of the public health. A man who has the mental caliber to grasp and appreciate problems in medicine and who is a friend of the physicians, would do much to aid their efforts. He deserves the support of every physician in the state, regardless of politics.

ALUMNI MEETINGS

Read the notice, at the end of our news column, pertaining to alumni meetings in Chicago

REPORTS OF SOCIETIES

PARK REGION DISTRICT AND COUNTY SOCIETY

A quarterly meeting of the Society was held at Fergus Falls on April 15th, with 18 members present.

Dr. Charles Lyman Greene, of St. Paul, read a paper on "The Treatment of Gastric Ulcer"; Dr. W. C. Meckstroth, of Brandon, gave a paper on "Digestive Disorders in Children."

The meeting was an enthusiastic and profitable one. O. M. HAUGAN, M. D., Secretary.

MOWER COUNTY SOCIETY

A quarterly meeting of the Society was held on April 8th, at Austin.

Dr. C. C. Seck, of Austin, read a paper on "Catarrh of the Sigmoid"; Dr. R. S. Mitchell, of Grand Meadow, presented a paper on "Urinalysis." The paper was followed by the report of cases and a full discussion. Dr. Mitchell presented a patient for a clinic.

The following officers were elected: President, Dr. W. A. Frazer; secretary, Dr. R. S. Mitchell; treasurer, Dr. G. J. Schottler.

R. S. MITCHELL, M. D., Secretary.

HENNEPIN COUNTY SOCIETY

A mid-monthly meeting of the Society was held on April 20th. The president, Dr. F. A. Knights, was in the chair, and 35 members present.

Dr. J. F. Corbett read a paper on "Acute Degeneration of the Liver Following Chloroform Narcosis."

The discussion was opened by Dr. J. Clark Stewart and entered into by Drs. L. W. Day, R. E. Farr, G. C. Barton, A. W. Abbott, being closed by Dr. Corbett.

Dr. R. E. Farr read a paper on "Some Indications for Craniotomy." The discussion was opened by Dr. W. A. Jones, followed by Drs. L. A. Nippert, F. A. Dunsmoor, J. F. Corbett, H. W. Jones, A. S. Hamilton, L. M. Crafts, A. W. Abbott, A. T. Mann, N. Driesbach, and was closed by Dr. Farr.

Dr. J. F. Corbett presented a tumor of the cerebellum.

C. H. BRADLEY, M. D., Secretary.

STEARNS-BENTON COUNTY SOCIETY

The annual meeting of the Society was held at St. Cloud on April 16th, with 20 members present. Papers were read as follows: "Neurosis of the Stomach," Dr. O. H. Wolner, St. Cloud; "Acute Gastritis," Dr. J. A. DuBois, Sauk Center; "Etiology, Pathology, Symptoms, Diagnosis, and Medical Treatment of Cancer of the Stomach," Dr. J. M. McMasters, Sauk Center; "Stricture of the Esophagus and Cardia," Dr. J. B. Dunn, St. Cloud.

The papers were well written, to the point, and up to date. The points brought out were practical. Each paper was thoroughly discussed, thus proving the papers very interesting.

Officers were elected as follows: President, Dr. J. A. DuBois, Sauk Center; vice-president, Dr. J. H. Beaty, St. Cloud; secretary and treasurer, Dr. J. C. Boehm, St. Cloud; censor for three years, Dr. J. B. Dunn, St. Cloud; delegate, Dr. C. B. Lewis, St. Cloud; alternate, Dr. A. D. Whiting.

The next meeting will be held May 14th, 1908, at St. Cloud. Dr. W. L. Freeman, of Foley, was elected a member of the Society.

J. C. BOEHM, M. D., Secretary.

WATERTOWN (S. D.) DISTRICT SOCIETY

The Society met at Watertown, S. D., on April 14th, with a good attendance.

Dr. H. M. Freeburg, of Watertown, read a paper on "Scarlet Fever"; Dr. E. T. Ramsey, of Clark, and Dr. N. J. Benner, of Willow Lake, also read papers. The three papers were discussed at length.

The doctors invited the dentists of the city to a banquet in the evening at the Grand Hotel.

The Society will hold a midsummer meeting of two days at Lake Kampeska.

G. A. ABBOTT, M. D., Secretary pro tem.

KANDIYOHI-SWIFT COUNTY SOCIETY

The annual meeting of the Society was held on April 8th, at Willmar.

Dr. J. C. Jacobs, of Spicer, read a paper on "Angioneurotic Edema, with Report of a Case."

The following were elected officers for the current year: President, Dr. J. R. Peterson, Willmar; Vice-President, Dr. Hans Johnson, Kerkhaven; secretary, Dr. G. A. Newman, New London; treasurer, Dr. B. J. Branton, Willmar; delegate, Dr. C. L. Scofield, Benson; alternate, Dr. G. A. Newman, New London.

G. A. NEWMAN, M. D., Secretary.

NEWS ITEMS

Dr. W. C. Chambers, of Ceylon, has moved to Blue Earth.

Dr. F. M. Baldwin has moved from Ashton, S. D., to Redfield, S. D.

Dr. James H. Lockwood, of Watertown, S. D., was married last month.

Dr. William Frost, who recently returned from Europe, will locate in the West.

Dr. H. A. Davis, of Dickinson, N. D., will conduct a private hospital at that place.

Dr. J. W. Newlove, of Rugby, N. D., has decided to locate in Minot, in the same state.

Dr. P. H. Bennion, of Merriam Park, St. Paul, and Miss Edith Jane Snell, were married last week.

The North Dakota State Medical Association meets in Grand Forks on the 12th and 13th of this month.

A \$30,000 hospital building seems to be in sight for New Paynesville, to be erected by the Lutherans.

Dr. A. G. Hovde, of Biwabik, who has been on the hospital staff for several years, will locate in Superior, Wis.

Drs. Carl J. Holman and wife, of Mankato, are visiting the clinics in Chicago, Cleveland, Baltimore, and Philadelphia.

Dr. J. D. McKenzie, of Milnor, N. D., said to be the first man to practice medicine in North Dakota, died last month.

Dr. Ignatius Donnelly, who has been practicing a short time in Mankato since his return from Montana, has decided to locate in Minneapolis.

Dr. Joseph Nicholson, of Brainerd, has purchased a large residence building which he will use as a hospital. The capacity of the hospital will be twenty-four patients.

The Owatonna Hospital has decided to establish a training department for nurses. One pupil will be taken every six months, and wages will be paid after the first three months.

The Camp Release District Society has adopted a new fee-bill. The fees are as follows: day visits in town, \$1.50; night visits, \$2.50. Only a slight increase was made for country visits.

Dr. J. G. Parsons has moved from Brookings, S. D., to Sioux Falls, S. D., and will continue to limit his practice to eye, ear, nose, and throat work. Dr. Parsons has offices in the Lacotah building.

The citizens of Sherburn are raising funds for a new hospital. It is proposed to raise \$12,000 for a building. The hospital will be placed in the hands of the Catholic Sisters, with Drs. Farrish in charge as surgeons.

Dr. J. A. Witherspoon, of Nashville, Tenn., is to be the editor-in-chief of a new medical journal which, it is planned, will be representative of the South. It will be known as The Southern Medical Journal, and will appear on June 5th.

As a result of the closing of the medical department of Hamline, the Hamline chapter of Psi Rho Sigma has united with the chapter at the State University. The event was celebrated by a banquet at the West Hotel last month, Dr. W. J. Byrnes, of Minneapolis, acting as toastmaster.

Dr. L. G. Hill, of Watertown, S. D., is attending the meeting of the American Confederation of Reciprocating and Licensing Medical Boards, in session at Cleveland, Ohio, this week. From there he will go East to do post-graduate work in the eye and ear hospitals, returning to attend the A. M. A. in Chicago.

The following physicians received certificates, at the April examination, to practice in North Dakota: Guy Frank Rogers, Fargo; Miss Jessie Hattendorf, Jamestown; D. A. Baker, Bowman; J. F. Linner, Emmet; A. O. Aaker, Russo; A. C. Hoff, Sheldon; John J. Back, Park River; R. A. Scott, Cavalier; L. D. Tenbrook, Oberon; L. D. Mayland, Bismarck; W. K. Jacobi, Willow City; J. A. Hedding, Hope; C. D. Powell, Minnewaukan; Fred Dorland, Sherwood; Guy Stone, Minot; Charles E. Howard, Cogswell.

POSITION AS ASSISTANT WANTED

A student who studied medicine three years in Italy and is now engaged in a Minneapolis hospital, desires a position, as supply or assistant, for the summer. He speaks Italian and French fluently. Address A. L., care of this office.

SUBSTITUTE WORK WANTED

A Hamline senior who has an appointment in the City and County Hospital of St. Paul, beginning Dec. 10th, desires substitute work after graduating until Dec. 1st. Address E. S., care of this office.

PHYSICIAN WANTED

A resident of Minneapolis, registered in Minnesota; who can devote part of his time to special work. For a few months would want all of his time. Must have had at least two years of general or hospital practice. Address I. M., care of this office.

TO THE PROFESSION—X-RAY LABORATORY

I have a well equipped x-ray laboratory, rooms 214-218 American National Bank Building, corner Fifth and Cedar streets, and am prepared to do your radiographic or Roentgen-ray therapeutic work.—W. S. Fullerton, M. D., St. Paul, Minn.

POSITION WANTED

A graduate nurse, experienced in surgical work and the administration of anesthetics, who has been superintendent for several months of a small hospital, desires a similar position, preferably in Minnesota; or would act as general assistant. Address D. C. D., care of this office.

PHYSICIANS' ATTENTION.—Drug-stores on easy payments, etc. Drug-store positions, United States or Canada. F. V. Kniest, Omaha, Nebr.

PRACTICE FOR SALE

In a village of 500 inhabitants in the west central part of Minnesota, thickly settled, rich farming country surrounding; no other doctor in town; a good drug-store in town. The reason for leaving is that I want to move to the city and go into partnership with my brother. For further particulars address M. C., care of this office.

FOR SALE

In southern central Minnesota, an established and unopposed practice, worth from \$2,000 to \$2,500; may be increased; population of village 500; Americans and Germans; thickly settled country. Price, \$1,200 cash, which is less than cost of outfit, as follows: Office furniture, safe, operating-table, static and x-ray machines, nebulizer, tank, MacKenzie condenser, cautery, driving outfit, some household goods, etc. Collections over 95 per cent. Reasons for selling: After doing post-graduate work, am going to city. Do not answer unless you want to buy. Address, C. E., care of this office.

ALUMNI REUNIONS AT THE CHICAGO MEETING OF THE A. M. A.

The following letter has been received in regard to the plans for alumni reunions:

Chicago, March 19, 1908.

Up to date the following general plan has been decided upon for the alumni reunions at the meeting of the American Medical Association in Chicago next June by the Alumni Reunion Committee, which consists of a representative from each medical school which has a resident alumnus.

1. All the alumni reunions will be held Tuesday evening, June 2d.

2. A separate alumni reunion will be held at the various cafes and hotels, the choice of which is to be decided by the college that holds the reunion. The expense of the said reunion is to be defrayed by the college or the alumni attending the reunion, depending upon the policy of the institution. The college that authorizes the reservation will have to stand the expense and afterwards attend to the collection of the money from the alumni, if that is their method of financing it.

3. General alumni headquarters will be at the Auditorium. The Auditorium is also the headquarters for the A. M. A. meeting. Any school which cares to may participate in these headquarters, and while there will be no expense for the room, those schools which participate in it will be expected to pay their proportionate expense for stationery, attendant, etc.

4. All colleges not represented on the Alumni Committee on account of not having a resident alumnus can have an announcement put in the A. M. A. Journal and all the state journals by mailing what they wish published to the chairman of the Alumni Committee. If a reunion is arranged for, it will also be printed in the A. M. A. program and posted in the various sections. The Committee would suggest that as soon as you determine that a reunion will be held, your alumni be notified, either through your Bulletin or, if you do not have one, that you incorporate a notice in your commencement invitations.

5. The Committee, on request, will be glad to make reservations at hotels and boarding-places for visiting alumni. This it is well to remember, as, owing to the central location of Chicago, the attendance will undoubtedly be the largest in the history of the A. M. A.

Owing to the great number of reunions to be held on alumni night, colleges desiring reservations will be given the choice of hotels and cafes in the order of their receipt, taking into consideration the number to be cared for.

One of the members of our committee has suggested that those colleges that propose having vaudeville entertainment engage three or four performers to go from one reunion to the other, thus materially decreasing the cost of entertainment.

A Dutch lunch or banquet at a reputable hotel or cafe will cost from \$1.25 to \$2.00 per plate, cigars extra. Menus furnished on request of the alumni committee. A prompt reply to this letter will be appreciated.

All alumni of the medical department of the University of Minnesota who expect to attend the Chicago meeting should notify the secretary, Dr. Herbert W. Jones, Pillsbury Building, Minneapolis, at once, so that, if a sufficient number are going, the proper reservations and arrangements may be made.

The Minnesota State Medical Association

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1907-1908

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Place and date of next meeting, St. Paul, October, 1908

DISTRICT AND COUNTY ROSTER

APRIL, 1908

FIRST DISTRICT

COUNCILOR, E. A. HENSEL.....Alexandria

Clay-Becker County Medical Society

Regular Meetings, last Monday in January, April, July and October

Annual meeting in January

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Ogden, Emma K.Detroit
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Smith, S. W. Cheyenne Ag'cy, S. D.
Weeks, L. C.Detroit

Park Region District and County Medical Society

Wilkins, Otter Tail, Douglas, and Grant Counties

Regular meetings, second Wednesday in January, April, July and October.

Annual meeting in January

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SECRETARY
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Armstrong, L. W.Breckenridge
Baker, A. C.Fergus Falls
Berthold, J. L.Perham
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Cooper, D. J.Dent

Cowing, Phil. G.Ashby
Duncan, W. T.Fergus Falls
Freeborn, J. A.Fergus Falls
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Hand, W. R.Elbow Lake
Haskell, A. D.Carlos
Haugan, G. T.Battle Lake
Heimark, C. B.Battle Lake
Hensel, E. A.Alexandria
Kittleson, T. N.Fergus Falls
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McLean, T. N.Fergus Falls

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Sherping, O. Th.Fergus Falls
Vigen, J. G.Fergus Falls
Vinje, SyverHenning

Red River Valley Medical Society

Polk, Marshall, Kittson, Roseau, and Norman Counties

Regular meetings, fourth Tuesday in January, April, July and October

Annual meeting in January

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Wilkinson, J. C.Red Lake Falls
Wilson, W. C.E. Grand Forks

West Central Minnesota Medical Society

Pope, Stevens, Traverse, and Big Stone Counties

Regular meetings, second Wednesday in January, April, July and October

Annual meeting in January

PRESIDENT
Oliver, C. I.Graceville
SECRETARY
Hulburd, H. L.Morris
Bolsta, CharlesOrtonville
Caine, C. E.Morris
Christenson, C. R.Starbuck

Eberlin, E. A.Glenwood
Gibbon, L. L.Lowry
Healy, John A.Wheaton
Karn, J.Ortonville
Leland, J. T.Herman
Leuty, AmosMorris
Linde, HermanCyrus

Magnusson, H. V.Clinton
Randall, B. M.Graceville
Ransom, M. L.Hancock
Weir, J. D.Beardsley
Whittemore, J. G.Donnelly

SECOND DISTRICT

COUNCILOR, J. G. MILLSPAUGH.....Little Falls

Altkin County Medical Society

Regular meetings, first Tuesday in each month

Annual meeting in October

PRESIDENT
Graves, CarltonAitkin

SECRETARY
George, James W.Aitkin

Belsheim, A. G.Aitkin
Catlin, T. J.Waukenabo
Kelly, B. W.Aitkin

Upper Mississippi Medical Society

Aitkin, Beltrami, Cass, Crow Wing, Hubbard, Morrison, Todd, and
Wadena Counties

Regular meetings, second Tuesday in January, April, July, and October

Annual meeting in January

PRESIDENT
Roberts, L. M. Little Falls
SECRETARY
Lowthian, G. H. Hewitt
Altnow, Hugo A. Brainerd
Batcheller, Oliver T. Brainerd
Cameron, W. G. Staples
Christie, George R. Long Prairie
Corse, Charles A. Verndale
Coulter, Charles F. Wadena
Courtney, Walter Brainerd
Crosette, G. D. Motley

Davis, A. M. Akeley
Desmond, M. A. Akeley
Groves, A. F. Brainerd
Hall, Elmer E. Little Falls
Holst, C. F. Little Falls
Holst, J. B. Little Falls
Ide, A. W. Brainerd
Irish, P. H. Akeley
Johnson, Oscar V. Sebeka
Kenyon, Paul E. Wadena
Knickerbocker, Frank H. Staples
Marcle, Walter J. Walker

Miller, W. A. New York Mills
Millsbaugh, J. G. Little Falls
Morrison, W. R. Bemidji
Nicholson, Joseph Brainerd
Parrott, B. W. Long Prairie
Reid, William Deer Wood
Thabes, J. A. Brainerd
Trace, O. C. Little Falls
Van Valkenburg, B. F. Long Prairie
Wilcox, F. L. Walker

THIRD DISTRICT

COUNCILOR, W. S. FULLERTON. St. Paul

Ramsey County Medical Society

Regular meetings, last Monday of each month

Annual meeting in January

PRESIDENT
Sweeney, Arthur St. Paul
SECRETARY
Leavitt, F. E. St. Paul
Abbott, E. J. St. Paul
Abramovitch, J. H. St. Paul
Allen, Mason. St. Paul
Arcker, A. B. St. Paul
Appleby, E. V. St. Paul
Armstrong, J. M. St. Paul
Artz, C. P. St. Paul
Bacon, Knox. St. Paul
Bacon, L. C. St. Paul
Balcome, F. E. St. Paul
Ball, C. R. St. Paul
Barness, Nellie. St. Paul
Beckley, F. L. St. Paul
Benepe, L. M. St. Paul
Bennion, P. H. St. Paul
Bettingen, J. W. St. Paul
Binder, G. A. St. Paul
Boeckmann, E. St. Paul
Boeckmann, Egill St. Paul
Bohland, E. H. St. Paul
Bole, R. S. St. Paul
Boxell, E. C. St. Paul
Brooks, D. F. St. Paul
Brown, E. I. St. Paul
Buckley, E. W. St. Paul
Burch, F. St. Paul
Burns, R. M. St. Paul
Cameron, J. A. St. Paul
Campbell, E. P. St. Paul
Campbell, J. E. South St. Paul
Cannon, Charles M. St. Paul
Cannon, Harry St. Paul
Cavanaugh, J. O. St. Paul
Chamberlin, J. W. St. Paul
Christison, J. T. St. Paul
Colvin, A. R. St. Paul
Cook, Paul B. St. Paul
Coon, Geo. M. St. Paul
Cuff, Wm. S. St. Paul
Davis, H. W. St. Paul
Davis, William. St. Paul
Dennis, W. A. St. Paul
Denny, C. F. St. Paul
Dinwoodie, Wm. St. Paul
Donnelly, Ignatius St. Paul
Dunning, A. W. St. Paul
Earl, Robert O. St. Paul
Eshelby, E. C. St. Paul
Ferguson, J. C. St. Paul

Flagg, S. D. St. Paul
Foster, Burnside St. Paul
Freeman, Charles St. Paul
Fullerton, W. S. St. Paul
Fulton, John F. St. Paul
Geer, E. F. St. Paul
Ghent, M. M. St. Paul
Gilfillan, J. S. St. Paul
Gillette, A. J. St. Paul
Goodrich, Judd St. Paul
Gravelle, J. M. A. St. Paul
Greene, C. L. St. Paul
Hall, A. R. St. Paul
Hall, Charlotte St. Paul
Harding, J. C. St. Paul
Hawkins, V. J. St. Paul
Heath, A. C. St. Paul
Henderson, A. St. Paul
Hesselgrave, S. S. St. Paul
Hoff, Peder A. St. Paul
Hopkins, Mary St. Paul
Hunt, H. E. St. Paul
Johnson, Asa St. Paul
Johnson, H. C. St. Paul
Jones, Talbot St. Paul
Keam, A. P. St. Paul
Kelly, W. D. St. Paul
Kirkwood, S. M. St. Paul
Kistler, A. S. St. Paul
Lanckester, Howard St. Paul
Lerche, Wm. St. Paul
Lewis, J. D. St. Paul
Lewis, W. W. St. Paul
Little, W. J. St. Paul
Lundholm, E. M. St. Paul
McCloud, C. N. St. Paul
McCord, E. W. St. Paul
McDavitt, Thos. St. Paul
McKelway, G. I. St. Paul
McKeon, Owen. St. Paul
McLaren, Jennette M. St. Paul
MacLaren, A. St. Paul
McNamara, J. G. South St. Paul
Macdonald, Angus St. Paul
Markoe, J. C. St. Paul
Meade, C. J. St. Paul
Meyerding, E. A. St. Paul
Miller, A. W. St. Paul
Murphy, E. F. St. Paul
Nelson, J. C. St. Paul
Nelson, L. A. St. Paul
Nippert, H. T. St. Paul
O'Brien, H. J. St. Paul

O'Connor, J. V. St. Paul
Ogden, B. H. St. Paul
Ohage, Justus. St. Paul
Pediccord, H. St. Paul
Pine, A. A. St. Paul
Pine, O. S. St. Paul
Piper, C. B. St. Paul
Plondke, F. J. St. Paul
Putnam, Catherine St. Paul
Quinn, J. A. St. Paul
Ramsey, W. R. St. Paul
Renz, G. A. St. Paul
Reynolds, M. H. St. Paul
Riggs, C. E. St. Paul
Ritchie, H. P. St. Paul
Ritchie, Parks St. Paul
Robinson, L. S. B. St. Paul
Rogers, F. D. St. Paul
Rogers, J. T. St. Paul
Rothchilds, H. St. Paul
Rothrock, J. L. St. Paul
Savage, F. J. St. Paul
Schadle, J. E. St. Paul
Schmidt, F. C. St. Paul
Schwyzer, Arnold St. Paul
Senkler, Geo. E. St. Paul
Shimonek, Anton St. Paul
Smith, C. E. St. Paul
Sneve, Haldor St. Paul
Sohlberg, O. St. Paul
Staley, J. C. St. Paul
Stern, E. G. St. Paul
Stumm, T. W. St. Paul
Sweeney, C. F. St. Paul
Taylor, H. L. St. Paul
Tessler, M. St. Paul
Van Slyke, C. A. St. Paul
Van Slyke, F. W. St. Paul
Vieregge, J. A. St. Paul
Vittum, M. H. St. Paul
Walrath, Belle M. St. Paul
Walsh, E. F. St. Paul
Welch, M. C. St. Paul
Wheaton, C. A. St. Paul
Whitacre, J. C. St. Paul
Whitcomb, E. H. St. Paul
Whitman, A. F. St. Paul
Whitney, A. W. St. Paul
Williams, C. St. Paul
Wood, E. S. St. Paul
Zaun, J. J. St. Paul

Washington County Medical Society

Regular meetings second Tuesday every two months, odd numbered
months.

Annual meeting in January.

PRESIDENT
Stevens, F. A. Lake Elmo
SECRETARY
Landeon, F. G. Stillwater
Bolevin, E. S. Stillwater
Burfiend, G. H. Afton
Clark, T. C. Stillwater

Cottom, F. W. Marine Mills
Freligh, E. O. B. Stillwater
Furber, W. W. Cottage Grove
Haines, J. H. Stillwater
Humphrey, W. R. Stillwater
Kalinoff, D. Stillwater
Merrill, B. J. Stillwater

Noth, Henry W. Minneapolis
Pratt, W. H. Stillwater
Steen, A. H. Cottage Grove
Thomas, O. F. Lakeland
Wells, E. E. Stillwater
Withrow, M. E. International Falls

Chicago-Pine County Medical Society

Regular meetings, second Tuesday in January, April, July, and October

Annual meeting in October

PRESIDENT
Zeien, Thos. North Branch
SECRETARY
Anderson, C. A. Rush City
Cowan, D. W. Sandstone

Dredge, H. P. Sandstone
Ehmke, W. C. Willow River
Froehlich, H. W. Pine City
Gray, C. E. Rush City
Gunz, C. E. Chicago

McEachern, W. A. Sandstone
Murdoch, H. G. Taylor's Falls
Stenberg, Oscar. North Branch
Werner, O. S. Lindstrom
Wiseman, R. L. Pine City

(APRIL, 1908)

Central Minnesota District Medical Society

Mille Lacs, Isanti, Sherburne, and Kanabec Counties

Annual meeting in November

PRESIDENT
Swenson, CharlesBraham
SECRETARY
Lewis, A. J.Mora

Cooney, H. C.Princeton
Hixon, R. B.Cambridge
Sternor, O. W.Cambridge

Swennes, O. S.Lawrence
Titus, W. S.Mora
Vrooman, F. E.St. Francis

St. Louis County Medical Society

Regular meetings, second Tuesday of each month

Annual meeting in December

PRESIDENT
Murray, D. D.Duluth
SECRETARY
Linneman, N. L.Duluth
Abbott, C. U.Aurora
Abbott, Wm. P.Duluth
Adams, B. S.Hibbing
Ashley, Paul L.Virginia
Ayers, G. T.Ely
Bagley, W. R.Duluth
Barrett, F.Eveleth
Bergroth, E.Duluth
Blacklock, S. S.Hibbing
Boyer, S. H.Duluth
Braden, A. J.Duluth
Bray, C. W.Biwabik
Brooks, G. F.Stevenson
Brown, P. F.Eveleth
Brunelle, A. M.Cloquet
Budd, J. D.Two Harbors
Bullen, F. W.Hibbing
Carson, J. H.Duluth
Cheney, E. L.Duluth
Collins, H.Duluth
Conkey, C. D.Duluth
Coventry, W. A.Duluth
Crowe, J. H.Virginia
Daugherty, E. B.Duluth
Davis, H. S.Duluth
Deslauriers, A. A.Duluth
Detling, F. E.Duluth
Drenning, F. C.Duluth

Eklund, J. J.Duluth
Fahey, E. W.Duluth
Farmer, J. C.McKinley
Flemming, JamesCloquet
Gans, E. M.Eveleth
Graham, D.West Duluth
Graham, R.Duluth
Grawn, F. A.Duluth
Greeley, L. Q.Duluth
Hamel, C. E.Duluth
Harwood, W. E.Eveleth
Haney, C. L.Duluth
Hirschfield, M. S.Duluth
Hovde, A. G.Biwabik
Hovde, Hans N.Duluth
Jackola, JohnDuluth
Jern, J. H.West Duluth
Johnson, J. V.Eveleth
Kean, N. D.Coleraine
Keyes, C. R.West Duluth
Kinnear, T. J.Springfield, Ill.
Knauff, M. K.Two Harbors
Kraft, P.Duluth
Kuth, J. R.Duluth
Lenont, C. B.Virginia
Lum, C. E.Duluth
Lynam, F.Duluth
McAuliffe, J.Duluth
McComb, C. F.Duluth
McCoy, MaryDuluth
McCuen, J. A.Duluth
McGiffert, E. N.Duluth

Magie, W. H.Duluth
More, C. W.Eveleth
Nyquist, J. E.Cloquet
Oredson, O. A.Duluth
Parker, O. W.Ely
Patton, F. J.Duluth
Payette, C. H.West Duluth
Riley, E. A.Moose Lake
Risher, F. O.West Duluth
Robinson, J. M.Duluth
Rood, D. C.Hibbing
Schulze, A. G.Carlton
Schwartz, A. H.Duluth
Seashore, D. E.West Duluth
Shaw, A. W.Buhl
Shellman, John L.Nashwauk
Shipman, C. G.Ely
Smith, F. L.Chatfield
Stewart, C. A.Duluth
Storch, C. M.Grand Rapids
Sukeforth, L. A.Duluth
Taylor, A. C.Duluth
Taylor, C. W.Duluth
Tilderquist, D. L.Duluth
Tufty, J. M. O.Duluth
Tuohy, E. L.Duluth
Walker, A. E.Duluth
Watkins, O. S.Carlton
Weston, J. B.Duluth
Wilkinson, StellaDuluth

FOURTH DISTRICT

COUNCILOR, F. A. KNIGHTS.Minneapolis

Hennepin County Medical Society

Regular meetings, first Monday in each month, except July and August

Annual meeting in January

PRESIDENT
Knights, F. A.Minneapolis
SECRETARY
Bradley, C. H.Minneapolis
Abbott, A. W.Minneapolis
Addair, F. L.Minneapolis
Aldrich, A. G.Minneapolis
Aling, C. P.Minneapolis
Allen, H. W.Minneapolis
Anderson, A. E.Minneapolis
Anderson, J. D.Minneapolis
Angell, W. A.Minneapolis
Arey, H. C.Excelsior
Aurand, W. H.Minneapolis
Aurness, F. A.Minneapolis
Avery, J. FowlerMinneapolis
Aylmer, A. L.Minneapolis
Baier, Florence C.Minneapolis
Barber, J. P.Minneapolis
Barton, G. C.Minneapolis
Bass, G. W.Minneapolis
Baxter, S. H.Minneapolis
Beachler, G. F.Minneapolis
Behrens, B. M.Minneapolis
Bell, J. W.Minneapolis
Benjamin, A. E.Minneapolis
Bessenes, A. N.Minneapolis
Eishop, C. W.Minneapolis
Blake, JamesHopkins
Bouman, H. A.Minneapolis
Braasch, W. F.Minneapolis
Bracken, H. M.St. Paul
Brown, E. J.Minneapolis
Brown, R. S.Minneapolis
Bryant, O. R.Minneapolis
Byrnes, W. J.Minneapolis
Campbell, R. A.Minneapolis
Carlaw, C. M.Minneapolis
Cary, H. E.Minneapolis
Cates, A. B.Minneapolis
Chapman, O. S.Minneapolis
Chowning, Wm. W.Minneapolis
Cirkler, A. A.Minneapolis
Cockburn, J. C.Minneapolis
Cohen, H. A.Minneapolis

Condit, W. H.Minneapolis
Cook, H. W.Minneapolis
Cooke, W. H.Minneapolis
Corbett, J. F.Minneapolis
Cosmann, E. O.Minneapolis
Cowles, D. C.Minneapolis
Crafts, Leo M.Minneapolis
Crosby, J. A.Minneapolis
Cross, Jno. G.Minneapolis
Crume, Geo. P.Minneapolis
Dart, L. O.Minneapolis
Day, L. W.Minneapolis
Dearborn, B. S.Minneapolis
Deziel, G.Minneapolis
Disen, C. F.Minneapolis
Donaldson, C. A.Minneapolis
Driesbach, N.Minneapolis
Dunsmoor, F. A.Minneapolis
Dutton, C. E.Minneapolis
Eitel, Geo. C.Minneapolis
Erb, Frederick A.Minneapolis
Erickson, J. G.Minneapolis
Farr, R. E.Minneapolis
Fifield, Emily W.Minneapolis
FitzGerald, Don F.Minneapolis
Foote, Lucius F.Minneapolis
Force, J. F.Minneapolis
Franzen, H. G.Minneapolis
Fryberger, W. O.Minneapolis
Geist, Emil S.Minneapolis
Gordon, G. J.Minneapolis
Gould, J. B.Minneapolis
Graham, B. F.Minneapolis
Green, E. K.Minneapolis
Guilford, H. M.Minneapolis
Hagaman, George K.Anoka
Haggard, G. D.Minneapolis
Hall, W. A.Minneapolis
Hamilton, A. S.Minneapolis
Hare, E. R.Minneapolis
Harrach, J. W.Minneapolis
Harrington, C. D.Minneapolis
Hartzell, Thos. B.Minneapolis
Haverfield, Addie R.Minneapolis

Haynes, F. E.Minneapolis
Head, Geo. D.Minneapolis
Hedback, A. E.Minneapolis
Helk, H. H.Minneapolis
Henry, C. E.Minneapolis
Higgins, J. H.Minneapolis
Hill, R. J.Minneapolis
Hirschfield, AdolphMinneapolis
Hcegh, Knut.Minneapolis
Hunter, C. H.Minneapolis
Hutchins, E. A.Minneapolis
Hvoslef, Jakob.Minneapolis
Hynes, JamesMinneapolis
Hynes, J. E.Minneapolis
Inghart, Charles E.Minneapolis
Irwin, A. F.Minneapolis
Jensen, M. J.Minneapolis
Johnson, A. E.Minneapolis
Johnson, H. Amanda.Minneapolis
Jones, Herbert W.Minneapolis
Jones, W. A.Minneapolis
Kelly, E. S.Minneapolis
Kennedy, Jane F.Minneapolis
Kimball, H. H.Minneapolis
Kistler, C. M.Minneapolis
Kistler, J. M.Minneapolis
Kriedt, Dan'l.Minneapolis
Lane, Laura A.Minneapolis
Lapierre, C. A.Minneapolis
Law, A. A.Minneapolis
Lee, Thos. G.Minneapolis
Leland, M. H.Minneapolis
Lewis, J. M.Minneapolis
Lind, A.Minneapolis
Lind, C. J.Minneapolis
Linton, W. B.Minneapolis
Little, J. W.Minneapolis
Litzenberg, J. C.Minneapolis
Loberg, A. E.Minneapolis
Long, Jesse.Minneapolis
Lynch, M. J.Minneapolis
Lynch, R. F.Minneapolis
McCorm, C. A.Minneapolis
McDaniel, Oriana.Minneapolis

McDonald, H. N.....Minneapolis
 McDonald, I. C.....Minneapolis
 McDougald, D. W.....Minneapolis
 McEachran, A.....Minneapolis
 McLaughlin, J. A.....Minneapolis
 McMurdy, R. S.....Minneapolis
 Macdonald, J. W.....Minneapolis
 Macnie, J. S.....Minneapolis
 Malchow, C. W.....Minneapolis
 Mann, A. T.....Minneapolis
 Mead, Marion A.....Minneapolis
 Meyer, E. L.....Minneapolis
 Mintener, J. W.....Minneapolis
 Mitchell, L. C.....Minneapolis
 Monahan, J. A.....Minneapolis
 Moore, J. E.....Minneapolis
 Moore, J. T.....Minneapolis
 Moorehead, Martha B.....Minneapolis
 Morton, H. McI.....Minneapolis
 Mullin, R. H.....Minneapolis
 Murdock, A. J.....Minneapolis
 Murphy, W. B.....Minneapolis
 Murray, Wm. R.....Minneapolis
 Musgrave, Samuel, Jr., Minneapolis
 Nelson, C. P.....Minneapolis
 Nelson, H. S.....Minneapolis
 Newhart, Horace.....Minneapolis
 Nicholson, Elmer.....Minneapolis
 Nickerson, M. L.....Minneapolis
 Nickerson, W. S.....Minneapolis
 Nippert, L. A.....Minneapolis
 Nissen, Henrik.....Minneapolis
 Nootnagel, C. F.....Minneapolis
 Norred, C. H.....Minneapolis
 Nye, W. F.....Minneapolis
 Olson, Olaf A.....Minneapolis
 Orton, H. N.....Minneapolis

Owre, Oscar.....Minneapolis
 Parker, E. H.....Minneapolis
 Peters, R. M.....Minneapolis
 Pettit, C. W.....Minneapolis
 Phillips, Edwin.....Minneapolis
 Pineo, W. B.....Minneapolis
 Poebler, F. T.....Minneapolis
 Pratt, F. J.....Minneapolis
 Quinby, Thos. F.....Minneapolis
 Reed, Chas. A.....Minneapolis
 Rees, S. P.....Minneapolis
 Ringnell, C. J.....Minneapolis
 Rishmiller, J. H.....Minneapolis
 Roberts, Cora B.....Minneapolis
 Roberts, Thos. S.....Minneapolis
 Robitshek, E. C.....Minneapolis
 Rochford, W. E.....Minneapolis
 Rosen, Samuel.....Minneapolis
 Rutledge, J. W.....Minneapolis
 Sanford, J. A.....Minneapolis
 Scheffek, J. F.....Minneapolis
 Schjelderup, N. H.....Minneapolis
 Schmidt, Karl H.....Minneapolis
 Schwyzer, G.....Minneapolis
 Seashore, Gilbert.....Minneapolis
 Sedgwick, J. P.....Minneapolis
 Shelden, W. D.....Minneapolis
 Simpson, J. D.....Minneapolis
 Sivertsen, Ivar.....Minneapolis
 Slocumb, Maude S.....Minneapolis
 Smith, C. A.....Minneapolis
 Smith, D. Edmund.....Minneapolis
 Soderlind, A.....Minneapolis
 Spratt, C. J.....Minneapolis
 Spratt, C. N.....Minneapolis
 Staples, H. L.....Minneapolis
 Stewart, J. Clark.....Minneapolis

Strout, E. S.....Minneapolis
 Stuart, J. H.....Minneapolis
 Sweetser, H. B.....Minneapolis
 Sweetzer, S. E.....Minneapolis
 Talbot, Ada E.....Minneapolis
 Thomas, David O.....Minneapolis
 Tibbits, J. I.....Wayzata
 Tingdale, A. C.....Minneapolis
 Todd, F. C.....Minneapolis
 Towers, F. E.....Minneapolis
 Towers, Mary E.....Minneapolis
 Ulrich, Henry L.....Minneapolis
 Ulrich, Mabel S.....Minneapolis
 VanderHorck, M. P.....Minneapolis
 Voyer, Emil O.....Minneapolis
 Wang, A. M.....Minneapolis
 Wanous, E. Z.....Minneapolis
 Warham, Thos. T.....Minneapolis
 Watson, J. A.....Minneapolis
 Watson, John.....St. Louis Park
 Westbrook, F. F.....Minneapolis
 Weston, C. G.....Minneapolis
 Whetstone, Mary S.....Minneapolis
 Whipple, C. D.....Minneapolis
 White, S. M.....Minneapolis
 Wilcox, Archa E.....Minneapolis
 Wilcox, Van H.....Minneapolis
 Williams, C. W.....Minneapolis
 Williams, H. L.....Minneapolis
 Williams, Robert.....Minneapolis
 Williams, U. G.....Minneapolis
 Witham, C. A.....Minneapolis
 Woodard, F. R.....Minneapolis
 Woodworth, Elizabeth.....Minneapolis
 Wright, C. B.....Minneapolis
 Wright, C. D.....Minneapolis
 Wright, F. R.....Minneapolis

Meeker County Medical Society

Annual meeting in October

PRESIDENT
 Hildebrandt, Ernest.....Forest City
 SECRETARY
 Robertson, J. W.....Litchfield

Brigham, F. T.....Watkins
 Cassell, H. E.....Litchfield
 Chapman, W. E.....Litchfield
 Cutts, G. A. C.....Grove City

Danielson, Karl A.....Litchfield
 Donovan, J. J.....Eden Valley
 Peterson, A. C.....Dassel

Wright County Medical Society

Regular meetings first Monday in January, April, July and October

Annual meeting in October

PRESIDENT
 Ridgway, A. M.....Annandale
 SECRETARY
 Catlin, John J.....Buffalo

Chilton, E. Y.....Howard Lake
 Hawkins, E. P.....Montrose
 Larsen, Carl L.....Buffalo
 Metcalf, J. N.....Monticello

O'Hair, P.....Waverly
 Roseau, Victor.....Maple Lake
 Shrader, E. E.....Watertown
 Valiquet, M. V.....Rockford

Stearns-Benton County Medical Society

Regular meetings, third Thursday in January, April, July, and October

Annual meeting in April

PRESIDENT
 Lewis, Edwin J.....Sauk Center
 SECRETARY
 Boehm, J. C.....St. Cloud
 Beaty, J. H.....St. Cloud
 Beebe, W. L.....St. Cloud
 Brigham, Charles F.....St. Cloud
 Brigham, G. S.....St. Cloud
 DuBois, Julian A.....Sauk Center
 Dunn, John B.....St. Cloud
 Edmunds, I. L.....St. Cloud
 Ferree, George F.....New Paynesville

Freeman, W. L.....Foley
 Friesleben, William.....Sauk Rapids
 Hilbert, Pierre A.....Melrose
 Holdridge, Geo. A.....Foley
 Hubert, R. L.....St. Cloud
 Kern, Max J.....St. Cloud
 Kirghis, A. J.....Sauk Center
 Kuhlmann, August.....Melrose
 Lalonde, Edmund.....Torah
 Lamb, Harold L.....Sauk Center
 Leech, Stuart W.....Brooten
 Lewis, C. B.....St. Cloud

McMasters, James M.....Sauk Center
 Maloy, Geo. E.....St. Cloud
 Moynihan, A. F.....Sauk Center
 Pilon, Pierre C.....New Paynesville
 Pinnault, H. A.....St. Joseph
 Putney, Geo. E.....New Paynesville
 Ridgway, Alex.....Belgrade
 Sherwood, Geo. E.....Kimball
 Whiting, Arthur D.....St. Cloud
 Wolner, O. H.....St. Cloud
 Woods, E. A.....Clear Lake

Kandiyohi-Swift County Medical Society

Regular meetings, April and June

Annual meeting in April

PRESIDENT
 Peterson, J. R.....Willmar
 SECRETARY
 Newman, G. A.....New London
 Archibald, F. M.....Breckenridge
 Branton, Berton J.....Atwater

Daignault, Oscar.....Benson
 Frost, E. H.....Willmar
 Jacobs, J. C.....Spicer
 Johnson, Christian.....Willmar
 Johnson, Hans.....Murdock

Rains, J. M.....Willmar
 Scofield, C. L.....Benson

FIFTH DISTRICT

COUNCILOR, H. M. WORKMAN.....Tracy

Camp Release District Medical Society

Renville, Chippewa, Lac qui Parle, Yellow Medicine, and Sibley Counties

Regular meetings, fourth Thursday in January, April, July and October

Annual meeting in January

PRESIDENT

Bushey, M. E.....Arlington

SECRETARY

Zimbeck, R. D.....Montevideo

Adams, R. C.....Bird Island

Bacon, R. S.....Montevideo

Benson, O. O.....Sacred Heart

Bergh, I. N.....Montevideo

Burns, M. A.....Milan

Carpenter, G. S.....Glenham, S. D.

Clay, E. M.....Renville

Cole, H. B.....Franklin

Cressey, F. J.....Granite Falls

Davison, P. C.....Clara City

Ferguson, James B.....Olivia

Flower, Ward Z.....Gibson

Gaines, E. C.....Buffalo Lake

Gammell, H. W.....Madison

Giere, E. O.....Madison

Hacking, F. H.....Granite Falls

Helland, J. W.....Maynard

Hutchins, O. S.....Canby

Johnson, A. E.....White Rock, S. D.

Johnson, H. M.....Dawson

Johnson, Otto F.....Winthrop

Jones, D. N.....Gaylord

Kanne, C. W.....Arlington

Kilbride, J. S.....Canby

La Rue, B. F.....Appleton

Larson, L. A.....Montevideo

Lee, Wm. P.....Fairfax

Lumley, W. A.....Renville

Mee, P. H.....Gaylord

Mesker, G. H.....Olivia

Miller, F. C.....Olivia

Moore, W. J.....Wood Lake

Nelson, N. A.....Dawson

Penhall, F. W.....Morton

Plehn, J. F.....Bellingham

Powell, C. B.....Madison

Rees, Harold.....Granite Falls

Rogers, C. E.....Montevideo

Schneider, J. P.....Greene Isle

Stemsrud, A. A.....Dawson

Stoddard, A. G.....Fairfax

Stolpestad, H. L.....Lafayette

Strout, George E.....Winthrop

Thrane, M.....Madison

Watson, Charles W.....Boyd

Watson, F. G.....Clarkfield

Brown-Redwood County Medical Society

Annual meeting second Tuesday in January

PRESIDENT

Rothenberg, J. C.....Springfield

SECRETARY

Brand, W. A.....Redwood Falls

Adams, J. L.....Morgan

Aldrich, F. H.....Belview

Boyd, C. A.....Redwood Falls

Clement, L. O.....Lamberton

Fritsche, L. A.....New Ulm

Gibson, C. P.....Redwood Falls

Gosslee, G. L.....Wabasso

Gray, F. D.....Vesta

Keifer, M. A.....Sleepy Eye

Kuske, A. L.....Sanborn

Pease, Giles R.....Redwood Falls

Prim, J. A.....Comfrey

Reineke, G. F.....New Ulm

Schoch, J. L.....New Ulm

Sherer, D. C.....New Ulm

Shrader, J. S.....Springfield

Strickler, O. C.....New Ulm

Weiser, G. B.....New Ulm

Wellcome, J. W. B.....Sleepy Eye

Wood, D. F.....Hanska

Lyon-Lincoln County Medical Society

Regular meetings, first Tuesday in February, July and November

Annual meeting in February

PRESIDENT

Cox, A. J.....Tyler

SECRETARY

Workman, H. M.....Tracy

Germo, Chas.....Balaton

Hoidale, A. D.....Tracy

Jensen, J. C.....Hendricks

Knudson, B. C.....Tyler

Persons, C. E.....Marshall

Robertson, J. B.....Cottonwood

Thordarson, Th.....Minneota

Valentine, W. H.....Tracy

Wakefield, Wm.....Lake Benton

Weyrens, P. J.....Ivanhoe

SIXTH DISTRICT

COUNCILOR, A. E. SPALDING.....Luverne

Southwestern Society

Pipestone, Rock, Nobles, Murray, Cottonwood, and Jackson Counties

Regular meetings, second Thursday in January and July

Annual meeting in January

PRESIDENT

Beadie, W. D.....Windom

SECRETARY

King, Emil.....Fulda

Balcom, G. G.....Lake Wilson

Benson, Iver S.....Jackson

Bong, J. H.....Jasper

Brown, A. H.....Pipestone

Carrell, F. A.....Rushmore

Clark, A. H.....Worthington

Crowley, J. M.....Ellsworth

Dickman, L. A.....Lismore

Dolan, C. P.....Worthington

Doxey, George L.....Edgerton

Gerber, Lou M.....Jasper

Geyerman, P. T.....Worthington

Greene, C. A.....Windom

Humiston, Ray.....Worthington

Kilvington, S. S.....Dundee

Lowe, Thomas.....Pipestone

Manson, F. M.....Worthington

May, C. C.....Adrian

Miller, Victor I.....Westbrook

Nessa, N. J.....Brewster

Rice, G. D.....Pipestone

Richardson, W. E.....Slayton

Schultz, J. A.....Emmons

Searles, Scott.....Lakefield

Sherman, C. L.....Luverne

Sogge, L. L.....Windom

Spalding, A. E.....Luverne

Sullivan, M.....Adrian

Taylor, Wm. J.....Pipestone

Tofte, Josephine.....Ruthon

Welsler, F. R.....Windom

Wheat, F. C.....Marshall

Wiedow, Henry.....Worthington

Williams, A. B.....Willmont

Williams, Leon A.....Slayton

Wright, C. O.....Luverne

Blue Earth Valley Medical Society

Faribault and Martin Counties

Regular meetings, second Tuesday in January and July

Annual meeting in January

PRESIDENT

Jacobs, A. C.....Elmore

SECRETARY

Broberg, J. A.....Blue Earth

Chambers, W. C.....Blue Earth

Durgin, F. L.....Winnebago

Farrish, M. J.....Sherburn

Farrish, R. C.....Sherburn

Franklin, A. J.....Blue Earth City

Guillixon, A. F.....Ericslyn

Hanson, F. R.....Lakefield

Holm, P. F.....Wells

Humes, J. P.....Winnebago City

Hunt, F. N.....Blue Earth City

Johnson, H. P.....Fairmont

Schmitt, S. C.....Blue Earth

Urstad, O. H.....Klester

Vaughan, G. E.....Winnebago

Watsonwan County Medical Society

Regular meetings, held monthly at St. Peter

Annual meeting, second Wednesday in December

PRESIDENT

Thompson, Albert.....St. James

SECRETARY

Haynes, B. H.....St. James

Bissell, C. P.....Lewisville

Cooley, C. O.....Madelia

McCarthy, J. W.....Madelia

Rowe, W. H.....St. James

(APRIL, 1908)

SEVENTH DISTRICT

COUNCILOR, F. A. DODGE.....Le Sueur

Nicollet County Medical Society

Nicollet and the West Half of Le Sueur County

Regular meetings, January and September

Annual meeting in January

PRESIDENT
Merritt, Geo. F.....St. Peter
SECRETARY
Le Clerc, Joseph E.....Le Sueur
Aitkins, H. B.LeSueur Center
Brown, W. W.....Cleveland

Daniels, J. W.....St. Peter
Dodge, F. A.....Le Sueur
Freeman, George A.....St. Peter
Hartung, H. A.....Le Sueur
McIntyre, G. W.....St. Peter
Powell, W. H.....Kasota

Ray, C. W.....Nicollet
Strathern, F. P.....St. Peter
Theissen, W. M.....Henderson
Tomlinson, H. A.....St. Peter
Tuomy, Clark F.....St. Peter
Valin, H. D.....St. Peter

McLeod County Medical Society

Regular meetings, quarterly

Annual meeting, January 15th

PRESIDENT
Tinker, C. W.....Stewart
SECRETARY
Axilrod, D. L.Hutchinson
Cheleen, S. J.....Hutchinson
Clark, H. S.....Glencoe

Clement, J. B.....Lester Prairie
Dorsey, J. H.....Glencoe
Dulude, S.Winsted
Hovorka, T. W.Glencoe
Maurer, E. L.....Brownton

Nickerson, B. S.....Glencoe
Sheppard, Fred.....Hutchinson
Sheppard, P. E.....Hutchinson
Trutna, T. J.....Silver Lake
Wakefield, KeeHutchinson

Scott-Carver County Medical Society

Regular meetings, first Tuesday after the first Monday in January,

April, July, and October

Annual meeting in December

PRESIDENT
Schneider, H. A.....Jordan
SECRETARY
Reiter, H. W.Shakopee
Bohland, F. J.....Belle Plaine
Fischer, H. P.....Shakopee

Grivelli, C. T.....Young America
Grivelli, H. J.....Newmarket
Landenberger, John....New Prague
McKeon, James.....Montgomery
Moloney, G. R.....Belle Plaine
Novac, Edward E....New Prague

Phillips, W. H.Jordan
Pozdena, O. R.....Winfield, L. I.
Smith, H. O.....Shakopee
Soper, John E.Norwood

Goodhue County Medical Society

Regular meetings, the first Tuesday after Monday in January, April, July and October

PRESIDENT
Gryttenholm, K.Zumbrota
SECRETARY
Anderson, J. V.Red Wing
Backe, EdmundKenyon
Brynildsen, H. L.....Vasa
Conley, A. T.....Cannon Falls

Conley, H. E.....Cannon Falls
Cremer, M. H.....Red Wing
Cremer, P. H.....Red Wing
Dimmitt, F. W.....Red Wing
Gates, C. E.....Goodhue
Haessly, S. B.....Cannon Falls
Hewitt, C. N.....Red Wing

Hill, Charles.....Pine Island
Jaehnig, Bruno.....Red Wing
Jones, A. W.....Red Wing
McKinstry, H. L.....Red Wing
Overholt, G. H.....Kenyon
Wellner, G. C.....Red Wing

Rice County Medical Society

Regular meetings, January, April, July and October

Annual meeting in January

PRESIDENT
Rogers, A. C.....Faribault
SECRETARY
Rumpf, W. H.Faribault
Brubaker, E. E.....Northfield
Davis, F. U.....Faribault
Hatch, M. L.....Dundas
Hunt, W. A.....Northfield

Huxley, F. R.Faribault
Macdonald, A.....Morristown
Mayland, M. L.....Faribault
Phillips, J. G.....Northfield
Phillips, J. R.....Northfield
Pringle, A. F.....Northfield
Robillard, W. H.....Faribault
Rose, F. M.Faribault

Seeley, J. S.....Faribault
Smith, P. A.....Faribault
Strong, D. M.....Faribault
Warren, F. S.....Faribault
Warren, J. W.....Faribault
Wilkowski, C. W.Faribault
Wilson, W.....Northfield
Wylie, A. R. T.....Faribault

Wabasha County Medical Society

Regular meeting (annually) first Thursday after first Monday in July

PRESIDENT
Dougherty, J. P.....Wabasha
SECRETARY
Wilson, W. F.Lake City
Adams, J. C.....Lake City
Adams, W. T.Elgin

Asbury, J. T.....Wabasha
Bayley, E. H.....Lake City
Cochrane, W. J.....Lake City
Davis, J. P.....Hammond
Dempsey, D. P.....Kellogg
French, E. A.....Plainview

French, E. J.....Plainview
Ingram, L. C.....Zumbro Falls
Lester, Charles A.....Wabasha
McGuigan, Henry T.....Mazeppa
McGuire, C. J.....Minneiska
Slocumb, J. A.....Plainview

EIGHTH DISTRICT

COUNCILOR, A. O. BJELLAND.....Mankato

Blue Earth County Medical Society

Regular meetings last Monday of each month

Annual meeting, December meeting

PRESIDENT
Hielscher, J. A.Mankato
SECRETARY
Kelly, T. C.North Mankato
Andrews, J. W.....Mankato
Beach, W. A.Mankato
Benham, E. W.....Mankato
Bigelow, Charles E...Madison Lake
Bjelland, A. O.....Mankato
Bomberger, F. J.....Mapleton
Brandenburg, F. D.....Mankato
Coon, Wm. F.Elysian

Curran, G. R.....Mankato
Dahl, G. A.Mankato
Davis, E. J.....Minnehaha
DuMont, F. R.....Mankato
Edwards, J. M.....Mankato
Faulkner, L. A.....Mankato
Grimes, H. B.....Lake Crystal
Hering, H. H.....Lake Crystal
Holbrook, J. S.Mankato
Holman, C. J.....Mankato
Hughes, Helen.....Mankato
Hughes, Jane.....Mankato

James, J. H.....Mankato
Krueger, L. W.....Mapleton
Liedloff, A. G.....Mankato
McMicheal, O. H....Vernon Center
Merrill, J. E.....Amboy
Osborn, Lida.....Mankato
Schlesselman, J. T...Good Thunder
Schmauss, L. F....Alexander, Ind.
Schmitt, A. F.....Mankato
Smith, D. D.....Mankato
Tyrrell, J. B.....Waterville
Williams, John.....Lake Crystal

(APRIL, 1908)

Dodge County Medical Society

Regular meetings, third Wednesday in January, May, and September

Annual meeting in May

PRESIDENT

Thimsen, N. C. Hayfield

SECRETARY

Davis, F. W. Kasson

Adams, R. T. Mantorville
 Baker, A. L. Kasson
 Belt, W. E. Dodge Center
 Bigelow, C. S. Dodge Center

Clifford, F. F. West Concord
 Harrison, E. E. West Concord
 Way, O. F. Clairmont

Freeborn County Medical Society

Regular meetings, fourth Tuesday in May and November

Annual meeting in May

PRESIDENT

Barck, G. W. Albert Lea

SECRETARY

Rodli, O. E. Albert Lea

Bessessen, W. A. Albert Lea

Burton, O. A. Albert Lea
 Freeman, J. P. Glenville
 Hood, Mary E. Albert Lea
 Nannestad, J. R. Albert Lea
 Palmer, W. L. Albert Lea

Todd, W. E. Albert Lea
 Von Berg, J. P. Albert Lea
 Wedge, A. C. Albert Lea

Houston-Fillmore County Medical Society

Regular meetings, May, July and October

Annual meeting in October

PRESIDENT

Dunn, J. T. Wykoff

SECRETARY

Fischer, O. F. Houston

Anderson, Norman E. Harmony

Browning, W. E. Caledonia

Cady, C. W. Mabel
 Drake, S. A. Lanesboro
 Deters, W. A. Eitzen
 Gowdy, F. A. Harmony
 Hart, A. B. Canton
 Jensen, T. Spring Grove

Love, George A. Preston
 Nass, H. A. Mabel
 Onsgard, C. K. Rushford
 Onsgard, L. K. Houston
 Reay, G. R. Hokah
 Woodruff, C. W. Chatfield

Mower County Medical Society

Regular meetings second Wednesday of January, April, July and October

Annual meeting in October

PRESIDENT

Frazer, W. A. Lyle

SECRETARY

Mitchell, R. S. Grand Meadow

Allen, A. W. Austin

Cobb, W. F. Lyle

Daigneau, F. E. Austin

Fiester, Fannie K. Austin

Gray, G. W. Brownsdale
 Hart, M. J. LeRoy
 Hegge, C. A. Austin
 Hegge, O. H. Austin
 Henslin, A. E. LeRoy
 Johnson, C. H. Austin
 Kendrick, W. N. Spring Valley

Lech, Clifford. Austin
 Lewis, C. F. Austin
 McKenna, W. H. Austin
 Peirson, Homer F. Austin
 Rodgers, E. H. W. Austin
 Schottler, G. J. Dexter
 Schultz, F. W. Waltham

Olmsted County Medical Society

Regular meetings, first Friday of each month

Annual meeting in January

PRESIDENT

Crewe, John E. Rochester

SECRETARY

Matthews, Justus. Rochester

Beckman, E. H. Rochester

Braasch, W. F. Rochester

Burns, Frank W. Stewartville

Chapple, Chas. L. Rochester

Fawcett, Charles. Stewartville

Giffin, H. Z. Rochester
 Graham, C. Rochester
 Granger, Charles T. Rochester
 Henderson, M. S. Rochester
 Heyerdale, O. C. Rochester
 Judd, E. S. Rochester
 Kilbourne, A. F. Rochester
 Linton, Laura A. Rochester
 Mayo, C. H. Rochester

Mayo, W. J. Rochester
 Phelps, R. M. Rochester
 Plummer, H. S. Rochester
 Russell, H. R. Stewartville
 Smith, Frank D. Oronoco
 Stacey, Lida. Rochester
 Stinchfield, A. W. Rochester
 Wilson, L. B. Rochester
 Witherstine, H. H. Rochester

Steele County Medical Society

Regular meetings first Tuesday in odd numbered months

Annual meeting in January

PRESIDENT

Smersh, Francis M. Owatonna

SECRETARY

Stewart, Allan B. Owatonna

Adair, John H. Owatonna

Andrist, James W. Ellendale
 Bigelow, Edward E. Owatonna
 Eustis, W. C. Owatonna
 Hatch, Theo. L. Owatonna

Melby, Benedick. Blooming Prairie
 Morehouse, G. G. Owatonna
 Schulze, George. Owatonna
 Wood, H. G. Blooming Prairie

Waseca County Medical Society

Regular meetings, first Monday in January, April, July and October

Annual meeting in January

PRESIDENT

Greene, F. W. Waterville

SECRETARY

Blanchard, H. G. Waseca

Alley, A. G. Kilkenney

Batchelder, E. J. New Richland
 Chamberlin, W. A. Waseca
 Cory, Wm. M. Waterville
 Cummings, D. S. Waseca
 Hagen, H. O. New Richland

Lynn, J. F. Waseca
 O'Hara, J. J. Janesville
 Swartwood, F. A. Waseca
 Taylor, M. J. Janesville

Winona County Medical Society

Regular meetings, first Tuesday in January, April, July and October

Annual meeting in January

PRESIDENT

Rollins, F. H. St. Charles

SECRETARY

McGaughey, J. B. Winona

Brown, Harry. Rollingstone

Clark, C. N. St. Charles

Dolder, Felix C. St. Charles

Dudley, H. D. Cananea, Sonora, Mexico

Gates, G. L. Winona

Heise, W. F. C. Winona
 Keyes, E. D. Winona
 Lane, N. S. Winona
 Leicht, Oswald. Winona
 Lichtenstein, H. M. Winona
 Lindsay, W. V. Winona
 Lynch, J. L. Winona
 McGaughey, H. F. Winona
 McLaughlin, E. M. Winona
 Muir, Edwin S. Winona

Munger, L. H. Winona
 Neumann, W. H. Lewiston
 Olsen, O. R. St. Charles
 Pritchard, D. B. Winona
 Robbins, C. P. Winona
 Scott, J. W. St. Charles
 Steinbach, John. Winona
 Stewart, D. A. Winona
 Tweedy, G. J. Winona

ALPHABETICAL ROSTER

Abbott, A. W. Minneapolis
Abbott, C. U. Aurora
Abbott, E. J. St. Paul
Abbott, Wm. F. Duluth
Aborn, Wm. H. Hawley
Abramovitch, J. H. St. Paul
Adair, F. L. Minneapolis
Adair, John H. Owatonna
Adams, B. S. Hibbing
Adams, J. C. Lake City
Adams, J. L. Morgan
Adams, R. C. Bird Island
Adams, R. T. Mantorville
Adams, W. T. Elgin
Aitkens, H. B. Le Sueur Center
Aldrich, A. G. Minneapolis
Aldrich, F. H. Belview
Alexander, F. H. Barnesville
Aling, C. P. Minneapolis
Allen, A. W. Austin
Allen, H. W. Minneapolis
Allen, Mason St. Paul
Alley, A. G. Kilkenny
Altnow, Hugo A. Brainerd
Ancker, A. B. St. Paul
Anderson, A. E. Minneapolis
Anderson, C. A. Rush City
Anderson, J. D. Minneapolis
Anderson, J. V. Red Wing
Anderson, Norman E. Harmony
Andrews, J. W. Mankato
Andrist, James W. Ellendale
Angell, W. A. Minneapolis
Appleby, E. V. St. Paul
Arey, H. C. Excelsior
Armstrong, J. M. St. Paul
Armstrong, L. W. Breckenridge
Artz, C. P. St. Paul
Asbury, J. T. Wabasha
Ashley, Paul L. Virginia
Aurand, W. H. Minneapolis
Aurness, P. A. Minneapolis
Avery, J. Fowler. Minneapolis
Awty, W. J. Moorhead
Axilrod, D. L. Hutchinson
Ayers, G. T. Ely
Aylmer, A. L. Minneapolis

Backe, Edmund Kenyon
Bacon, Knox St. Paul
Bacon, L. C. St. Paul
Bacon, R. S. Montevideo
Bagley, W. R. Duluth
Baier, Florence C. Minneapolis
Baker, A. C. Fergus Falls
Baker, A. L. Kasson
Balcom, G. G. Lake Wilson
Balcome, F. E. St. Paul
Ball, C. R. St. Paul
Barber, J. P. Minneapolis
Barck, G. W. Albert Lea
Barrett, F. Eveleth
Barness, Nellie St. Paul
Barton, E. R. Frazee
Barton, G. C. Minneapolis
Bass, G. W. Minneapolis
Batchelder, E. J. New Richland
Batcheller, Oliver T. Brainerd
Baxter, S. H. Minneapolis
Bayley, E. H. Lake City
Beach, W. A. Mankato
Beachler, G. F. Minneapolis
Beadie, W. D. Windom
Beaty, J. H. St. Cloud
Beckley, F. L. St. Paul
Beckman, E. H. Rochester
Beebe, Warren L. St. Cloud
Behrens, B. M. Minneapolis
Beise, R. A. Brainerd
Bell, J. W. Minneapolis
Belsheim, A. G. Aitkin
Belt, W. E. Dodge Center
Benep, L. M. St. Paul
Benham, E. W. Mankato
Benjamin, A. E. Minneapolis
Bennion, P. H. St. Paul
Benson, Iver S. Jackson
Benson, O. O. Sacred Heart
Bergh, I. N. Montevideo
Bergröth, E. Duluth
Berthold, J. L. Perham
Bessessen, A. N. Minneapolis
Bessessen, W. A. Albert Lea
Bettingen, J. W. St. Paul

Bigelow, Charles E. Madison Lake
Bigelow, C. S. Dodge Center
Bigelow, Edward E. Owatonna
Binder, G. A. St. Paul
Bishop, C. W. Minneapolis
Bissell, C. P. Lewisville
Bjelland, A. O. Mankato
Blacklock, S. S. Hibbing
Blake, James Hopkins
Blanchard, H. G. Waseca
Boeckmann, E. St. Paul
Boeckmann, Egill St. Paul
Boehm, J. C. St. Cloud
Bohland, E. H. St. Paul
Bohland, F. J. Belle Plaine
Bole, R. S. St. Paul
Boleyn, E. S. Stillwater
Bolsta, Chas. Ortonville
Bomberger, F. J. Mapleton
Bong, J. H. Jasper
Bouman, H. A. Minneapolis
Boxell, E. C. St. Paul
Boyd, C. A. Redwood Falls
Boyd, H. J. Alexandria
Boyer, S. H. Duluth
Braasch, W. F. Rochester
Brabec, F. J. Perham
Bracken, H. M. St. Paul
Braden, A. J. Duluth
Bradley, C. H. Minneapolis
Brand, W. A. Redwood Falls
Brandenburg, F. D. Mankato
Branton, Berton J. Atwater
Bratrud, Theodore Warren
Bray, C. W. Biwabik
Brigham, Charles F. St. Cloud
Brigham, F. T. Watkins
Brigham, G. S. St. Cloud
Broberg, J. A. Blue Earth
Brooks, D. F. St. Paul
Brooks, G. F. Stevenson
Brown, A. H. Pipestone
Brown, E. I. St. Paul
Brown, E. J. Minneapolis
Brown, Harry Rolling Stone
Brown, P. F. Eveleth
Brown, R. S. Minneapolis
Brown, W. W. Cleveland
Browning, W. E. Caledonia
Brubaker, E. E. Northfield
Brunelle, A. M. Cloquet
Bryant, O. R. Minneapolis
Brynildsen, H. L. Vasa
Buckley, E. W. St. Paul
Budd, J. D. Two Harbors
Bullen, F. W. Hibbing
Burch, F. St. Paul
Burfiend, G. H. Afton
Burnap, W. L. Pelican Rapids
Burns, Frank W. Stewartville
Burns, M. A. Milan
Burns, R. M. St. Paul
Burton, O. A. Albert Lea
Bushey, M. E. Arlington
Byrnes, W. J. Minneapolis

Cady, C. W. Mabel
Caine, C. E. Morris
Cameron, J. A. St. Paul
Cameron, W. G. Staples
Campbell, E. P. St. Paul
Campbell, J. E. South St. Paul
Campbell, R. A. Minneapolis
Cannon, Charles M. St. Paul
Cannon, Harry St. Paul
Carlaw, C. M. Minneapolis
Carman, J. B. Detroit
Carman, J. E. Detroit
Carpenter, G. S. Glenham, S. D.
Carrell, F. A. Rushmore
Carson, J. H. Duluth
Cary, H. E. Minneapolis
Cassell, H. E. Litchfield
Cates, A. B. Minneapolis
Catlin, John J. Buffalo
Catlin, T. J. Waukenabo
Cavanaugh, J. O. St. Paul
Chamberlin, J. W. St. Paul
Chamberlin, W. A. Waseca
Chambers, W. C. Blue Earth
Chapman, O. S. Minneapolis
Chapman, W. E. Litchfield
Chapple, Chas. L. Rochester
Cheleen, S. J. Hutchinson

Cheney, E. L. Duluth
Chilton, E. Y. Howard Lake
Chowning, Wm. W. Minneapolis
Christenson, C. R. Starbuck
Christie, George R. Long Prairie
Christison, J. T. St. Paul
Cirkler, A. A. Minneapolis
Clark, A. H. Worthington
Clark, C. N. St. Charles
Clark, H. S. Glencoe
Clark, T. C. Stillwater
Clay, E. M. Renville
Clement, J. B. Lester Prairie
Clement, L. O. Lamberton
Clifford, F. F. West Concord
Cobb, W. F. Lyle
Cockburn, J. C. Minneapolis
Cohen, H. A. Minneapolis
Cole, Herman B. Franklin
Collins, H. Duluth
Colvin, A. R. St. Paul
Condit, W. H. Minneapolis
Conkey, C. D. Duluth
Conley, A. T. Cannon Falls
Conley, H. E. Cannon Falls
Cook, H. W. Minneapolis
Cook, Paul B. St. Paul
Cooke, W. H. Minneapolis
Cooley, C. O. Madelia
Coon, Geo. M. St. Paul
Coon, Wm. F. Elysian
Cooney, H. C. Princeton
Cooper, D. J. Dent
Corbett, J. F. Minneapolis
Corse, Charles A. Verdale
Cory, Wm. M. Waterville
Cosman, E. O. Minneapolis
Cottom, F. W. Marine Mills
Coulter, Chas. F. Wadena
Courtney, Walter Brainerd
Coventry, W. A. Duluth
Cowan, D. W. Sandstone
Cowing, Phil. G. Ashby
Cowles, D. C. Minneapolis
Cox, A. J. Tyler
Crafts, Leo M. Minneapolis
Cremer, M. H. Red Wing
Cremer, P. H. Red Wing
Cressey, F. J. Granite Falls
Crewe, John E. Rochester
Crosby, J. A. Minneapolis
Crossette, G. D. Motley
Crosse, Jno. G. Minneapolis
Crowe, J. H. Virginia
Crowley, J. M. Ellsworth
Crume, Geo. P. Minneapolis
Cuff, Wm. S. St. Paul
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Cummings, J. S. St. Hilaire
Curran, G. R. Mankato
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Cyr, A. Barnesville

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Daignault, Oscar Benson
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Danielson, Karl A. Litchfield
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Davis, E. J. Minnehaha
Davis, H. S. Duluth
Davis, F. U. Faribault
Davis, F. W. Kasson
Davis, H. W. St. Paul
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Davis, L. A. Dalton
Davis, William St. Paul
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Dennis, W. A. St. Paul
Denny, C. F. St. Paul
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Desmond, M. A. Akeley
Deters, W. A. Eitzen
Detling, F. E. Duluth
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OBSERVATIONS ON THE METHODS OF DIAGNOSIS IN SOME OF THE CLINICS OF GERMANY

By L. A. NIPPERT, M. D.

MINNEAPOLIS

One of the greatest advantages in attending a medical society, be it county, state, national, or international, is the meeting of men, laborers in greater fields or in special spheres, of youthful vigor or mature wisdom, whose enthusiasm and learning incite and inspire, and, by presenting new points of view, create renewed interest in subjects which have become routine and devoid of attraction.

To come into contact with some of the men of a nation, recognized as the center of medical thought and research, to see their work, and to benefit by their teaching, was the writer's good fortune last summer. The object of his visit to some of the university hospitals and medical clinics was to study the generally accepted clinical methods as practised in Germany and Switzerland. For this purpose his itinerary covered the clinics of Hamburg, Berlin, Gottingen, Jena, Marburg, Giessen, Heidelberg, Freiburg, Wurzburg, Erlangen, Tubingen, Munich, and Dresden in Germany; Basel, Zurich, and Bern in Switzerland; and included also a short visit to Vienna to attend the meeting of the International Antituberculosis Conference. The famous Sanatoria of Beelitz and Grabosee, near Berlin, the state Sanatorium of Friederichshain, in the Black Forest, and Ehrlich's Institute for Experimental Research, at Frankfort on the Main, were also visited.

Physical diagnosis, laboratory methods, and other accessories employed for the construction of

diagnosis of internal diseases, with special reference to the thoracic organs, were investigated, in order to obtain a knowledge of the generally employed methods accepted by all, eliminating those of little importance, and the multitude of those still in the experimental stage.

Careful inspection is never neglected. The general appearance and structure of the thorax is closely noted. Dr. von der Felden, first assistant of Brauer of Marburg, calls attention to the difference in size of the supraclavicular triangles as a source of difference of sound-production on percussion. The epigastric triangle, shortly called "habitus," receives much attention as an indication pointing, if acute, towards functional disease, and, if obtuse, to organic affection of the stomach. The assertion of Dr. Staheli, the first assistant of His, that the boundary of the apices of the lungs can be determined by palpitation, is not generally accepted. That the sensation of resistance imparted to the finger when percussing over a dull area is dependent on the ear, was demonstrated by Prof. Paessler of Dresden by closing the ears with the fingers. When this was done, even air-containing organs impart a sensation of firmness on percussion.

Percussion, through insistence of Prof. Goldscheider of Berlin, has been developed into a fine art—almost superfine. There is no doubt, however, that by means of his "Schwellenwerth percussion," obtained by perpendicular percussion-strokes so light that the sound is barely percept-

ible, a more accurate outline of the size of the heart can be obtained than by the old methods. This has been proven conclusively by comparing the results with the tracings of the orthodiagraph. His method of staff-percussion, by means of a glass rod with a rubber cap, has a distinct advantage in limiting the percussion area and thus obtaining sharper outlines, as, for instance, in the determination of the apices. Usually the absolute heart-dullness is taken for estimating the size of the organ.

Nothing of importance was noted in the field of auscultation except the gratification that Dr. Staheli confesses that he could not always distinguish a muscular creak from a friction-sound, an observation which the writer has frequently made in his own examinations.

Menstruation plays but an inferior role. Prof. Muller of Munich does not regard the extension of heart-dullness to 1-2 cm. beyond the right-sternal border as abnormal.

Exploratory puncture is practiced freely and without hesitancy. Contrary to Dr. Musser's attitude, as stated in a paper read before the American Medical Association, in Boston, condemning the free use of the aspirating-needle for the differentiation of intrathoracic effusion from consolidation, Dr. Kraus, of the Medical Clinic of Berlin, says, "It is a violation of art (Kunstfehler) not to aspirate in suspected cases of effusion." I think we all agree with him.

Lumbar puncture is constantly resorted to for diagnostic and therapeutic purposes. The Marburg Clinic has a special puncture-room for puncturing serous cavities, including the ventricles of the brain.

As an accessory, the radiograph is in general use. No lecture on affections of the heart is considered complete unless the outlines of the Roentgen shadows are given, or the heart boundaries have been traced by means of the orthodiagraph; in fact, some men like Dr. Moritz of Strassburg and Dr. Groedel of Nanheim believe this apparatus to be indispensable for determining the absolute size of the heart. Others regard the general configuration, as the shadow of bulging of the left auricle in mitral regurgitation and the prominence of the right ventricle in mitral stenosis, as sufficient for all practical purposes. The absence of pericardial adhesions can be assumed when the apex of the heart is seen to rise from the diaphragm during systole. On persistent inquiry most of the men admit that percussion will give satisfactory results in the majority of cardiac

affections, but that the *x*-ray is a desirable accessory, especially for class demonstration, and is often of great value in detecting aneurism or other unsuspected thoracic tumors.

That pulmonary tuberculosis can be discovered by Roentgen shadows before any other methods can reveal its presence, seems exceedingly problematical, but in determining localized empyemata, pulmonary abscesses, or gauze left in the lung-tissue, the *x*-rays are a valuable corroboration of the results of physical diagnosis. No well-equipped state or municipal medical institution should be without this apparatus.

The literature on experimental and clinical medicine has been flooded during the past five years with articles on blood-pressure. It is a generally accepted fact that a decided and persistent increase points to interstitial nephritis, even if no other symptoms are present, and arteriosclerosis can be excluded. In so-called physiological albuminuria the blood-pressure may be diminished. While this method is not neglected, many of the clinicians seen, do not regard it of great diagnostic importance. Of the instruments used, Riva Rocci and the tonometer of Recklinghausen, which indicates the systolic maximum and diastolic minimum pressure on a manometer, are the favorites. Dr. Schord, Sahli's first assistant, believes Sahli's pocket manometer answers all practical purposes, and he demonstrated its use to the writer.

The most reliable hemoglobinometer is the Miesher von Fleischl, but in the majority of the clinics, Sahli's instrument is considered reliable enough for all practical purposes. The hemoglobin of 2 mm. of blood is converted into hematin by the addition of a one per cent HCl solution. It is then diluted with water until the color of the standard tube is matched. The percentage is noted from the marking of the tube.

It was a surprise to the writer to find that, instead of the supposed universal use of tuberculin for diagnostic purposes in the clinics of its fatherland, with the exception of Berlin, it is rarely given, and only in cases in which no other methods lead to definite results. Rhomberg of Tübingen believes that only the local, and not the general, reaction to tuberculin is of value. Eichhorst of Zurich rarely employs it. Stintzing of Jena does not use it. Sahli of Bern insists that the reaction obtained by its use means damage done (Tuberculinschaden).

In this connection the ophthalmic reaction by instillation of tuberculin in the eye for the diagnosis of tuberculosis by Calmette of Lille and v.

Pirquet's *Allegiermethode*, a vaccination with tuberculin, is mentioned as the latest attempts for a convenient and reliable diagnostic method. In the former a one per cent aqueous solution of dry tuberculin (to remove all irritating admixtures) is dropped upon the conjunctiva of one eye, which will react with a more or less severe conjunctivitis in the tubercular, but not in others. This method is not as harmless as stated, especially if the collyrium is repeated and a hypersensitiveness has been produced. An inflammation of the eye lasting for weeks may result.

Pirquet's vaccination, as demonstrated by its author before the Vienna Conference, is harmless, and appears to be of value in children, not in adults. Two places are inoculated with a twenty-five per cent solution of old tuberculin, and another place is scratched for control. The infected areas become red and swollen in tubercular children, much like *vaccinia*.

Laboratory methods abroad have obtained a high degree of efficiency, undoubtedly due to the large number of well-trained assistants, who do this work with great patience, and to the liberality of the government in supplying apparatus.

Blood-cultures are made in all cases pointing to infection, and very liberal quantities of blood are taken in some obscure cases, as in suspected typhoid. Since it has been found that the typhus bacillus grows more prolific in a bile-culture, culture-tubes for this purpose are being prepared by Merck of Darmstadt. Cultures from effusion and inflammatory secretions are also made use of freely, as from pleuritic serum and appendiceal abscesses. Blood-counts are made daily or hourly, as it may appear necessary. Polycythemia is not often found. A case was seen in Krehl's Clinic at Heidelberg with an erythrocyte count of ten million. A decided increase of leucocytes is considered a valuable diagnostic aid in distinguishing epidemic cerebrospinal meningitis from typhoid in which a decrease of leucocytes, a leucopena, is the rule. In severe toxemia of pneumonia and in perforation of the appendix leucopenia has also been found. Hyperleucocytosis is not infrequently present before the crisis in appendicitis.

In the constantly appearing new methods of staining microorganisms, a method of staining tubercle bacilli in the spinal fluid in use in Heubner's Clinic, deserves special mention. The fluid withdrawn is carefully placed, without shaking, in an ice-box, and after twenty-four hours a

spiderweb fibrinous clotting has occurred. This is floated onto a slide, not touched with needles, fixed by heat, and stained with carbol fuchsin, then decolorized by a one per cent HCl solution. Tubercle bacilli are found in 90 per cent of the specimens.

In animal tests, made chiefly in order to determine whether an effusion is tubercular, it has been found that a slight trauma, such as crushing of the inguinal glands of the guinea-pig just before injection, will develop glandular tuberculosis within a week, as compared with three or four weeks by the usual method (Bloch's method).

Cytodiagnosis adds an additional link in the chain of scientific diagnoses. The character of the cells found in infections of serous sacs, pleura, pia, and peritoneum, may assist in determining the nature of the process. In chronic processes, as in tuberculosis, a larger number of lymphocytes are present; if acute from other infection, the polynuclear leucocytes preponderate. Both Erlich's and Leishman's stains are employed. An increase in eosinophiles in continued fever speaks in favor of typhoid. In pernicious anemia their preponderance suggests intestinal parasites.

While assistant professors of the larger clinics, as in Berlin, Hamburg, Heidelberg, and Munich, have gone to London to study Wright's method of obtaining the opsonic index, it has not as yet, so far as the writer could determine, found an accepted place in the diagnostic armamentarium of the German clinics.

While most of the methods mentioned have become the common property of the medical profession the world over, and can be studied and observed in our own institutions of learning, it is a matter of satisfaction to drink at the fountain and observe the methods as practiced by their originators.

In conclusion, the writer desires to express his appreciation of the ready spirit of willingness with which the clinics and methods were shown to him by men in high position, such as Prof. Lenhartz of Hamburg, Eichhorst of Zurich, von Krehl of Heidelberg, and Stintzing of Jena, and of the obliging courtesy of the first assistants everywhere. It is gratifying to experience this demonstration of international fraternity, which, freely and without stint, imparts the results of years of learning to a stranger without credentials, except that he is "ein Herr College."

THE DIAGNOSIS AND TREATMENT OF THE PNEUMONIAS OF CHILDHOOD*

By J. TRENT CHRISTISON, M. D.

Professor of Diseases of Children University of Minnesota

ST. PAUL

The pneumonias of childhood differ in many respects from the same condition as seen in the adult; and for our purpose they may be divided into two classes: First, those cases primary in character, having a more or less abrupt onset, and following a fairly well-defined course; second, the cases which accompany, or appear as complications of, the contagious diseases, such as measles, diphtheria, scarlet fever, influenza, etc. In the former we are, theoretically at least, dealing with only one type of infection, that of the diplococcus pneumoniae of Frankel or the micrococcus lanceolatus. In the latter we often find the streptococcus, staphylococcus, the bacillus of diphtheria, influenza, etc.

The extreme frequency with which the delicate lung tissue of young children becomes involved in these pathological processes and the serious problems presented the doctor for solution, both as regards the immediate condition and the prevention of lasting or even fatal complications, are my reasons for choosing this subject for consideration. To make a careful and accurate diagnosis of pneumonia in a child seen for the first time, is often a very difficult, if not impossible, thing to do and requires infinite patience, as well as a modicum of skill. On the other hand, the picture presented oftentimes makes a diagnosis possible at a glance. Given a pale face with flushed cheek, an anxious countenance, labored and rapid respiration (50-60 per minute), noticeable movement of the alæ nasi, bright eyes, a slight cyanotic blueness of the lips, and the child lying on its side (usually the affected one), and the diagnosis is almost certain.

Children are said to be more susceptible to pneumonia between the age of two and six years. My records, however, show a fairly large percentage as occurring during the earlier period; and that one attack predisposes to others I think may be regarded as an established fact, especially is this true if there be a history of tuberculosis, syphilis, or alcoholism in the parentage. Exposure to cold, getting the feet wet, and fatigue may be regarded as pre-

disposing factors, only by bringing about a lowering of the child's vitality and lessening the resisting power. Children subject to coryza, those having adenoids, enlarged tonsils, and other catarrhal affections, seem more prone to the disease.

Symptoms.—In the lobar variety the onset, usually supervening upon a previously good state of health, is sudden and alarming. There may be chills or rigors, though often a convulsion takes the place of the chill in the child. There is an immediate rapid rise of temperature, frequently as high as 105° F. This is usually continuous, subsiding only with the crisis. The child complains of headache, and pain in the side, which is often misleading. Children are in the habit of referring their pain to the region of the stomach or lower abdomen, as in one case I saw a year or two ago in which the abdomen was opened for a supposedly diseased appendix, only to find nothing abnormal; and on the following morning when I was asked to see the child, all the classical symptoms of pneumonia presented themselves. The pulse is rapid, full and bounding in character; the respirations are from 50 to 60 per minute; vomiting or diarrhea is not infrequent, and delirium appears early, the latter being more prominent if the apex be involved. The normal pulse and respiration-ratio are disturbed, often being reduced to 1 to 2. The tongue is dry and brown. Constipation usually exists, and the urine is small in amount and highly colored, frequently containing albumin. There is usually a dry, hacking cough, with little or no expectoration. Unlike the adult, the child does not suffer from actual dyspnea. These conditions persist for from seven to nine days, when the crisis occurs, and at this time the utmost care and caution must be exercised to prevent the occurrence of actual collapse.

In the lobular variety (the essential pneumonia of infancy), the onset is more gradual, frequently being preceded by some catarrhal affection of the bronchial mucous membrane. There is, however, a notable exception to this in the so-called primary type, in which there is a rapid rise of temperature, usually not so high as in the lobar type of the disease, but

*Read before the Wright County Medical Society, January 5, 1908.

still high enough to cause alarm,—102°-104° F. This temperature rapidly assumes a remittent type, a variation of several degrees being noticed in the twenty-four hours, and this often continues for from ten days to three weeks, varying with each new area of lung involved. No marked crisis occurs. The cough is frequent, disturbs the child's rest, and often brings on attacks of vomiting, though pain is rarely occasioned by it. Here it is well to note the character of the cough, for while a strong, vigorous cough is to be regarded as favorable, a weak or suppressed one denotes danger, the actual cessation of the cough being often the first sign of approaching dissolution.

Physical Signs.—On inspection there should be noted the increased play of the accessory muscles of respiration, the lessened mobility of the affected side, and the increased respiratory-rate. Dullness on percussion is present in the greater number of cases of lobar type, but usually absent in the lobular variety, especially early in the disease, being found only after the most careful search, oftenest in the interscapular region, the exception being in those cases of tubercular origin in which the apex is involved, when dullness may be elicited anteriorly. I would offer a word of caution in regard to the percussion of the child's chest. It should be done in the gentlest and lightest possible manner. Dr. Oliver Wendell Holmes puts this very aptly in one of his exquisite poems where he says:

If the poor victim needs must be percussed,
Don't make an anvil of your patient's bust.
Doctors exist within a hundred miles,
Who thump a thorax as they'd hammer piles.
If you must listen to his doubtful chest,
Catch the essentials and ignore the rest,
Spare him—the sufferer wants of you and art
A track to steer by, not a finished chart.

The preferred position is lying prone or held in the nurse's arms with the child's chin resting on the shoulder of the attendant. Note also the hyperresonance above the affected area. Auscultation is by far the most valuable diagnostic measure. In the lobar variety it discloses weak or distant breath-sounds, bronchial breathing, increased resonance, and fremitus, and now and then a pleural friction, as well as the various râles.

If a large area of lung tissue be affected, note the accentuation of breath-sounds in the opposite lung.

The fine crepitant râle heard in the pneumonia of the adult may be quite absent in the pneumonia of the child, and it should be re-

membered that here the crepitation is to be heard only at the edge of the area of consolidation, not over it; and the fact that many, if not all, of these signs may not be apparent for several days and nothing be heard but tubular breathing, especially if the disease be central, should be borne in mind.

In the bronchopneumonias of younger children crepitation is relatively hard to detect, being masked by the larger râles. As the disease advances, however, we may detect it on careful examination, both on inspiration and expiration. As a general thing, any examination of the child's chest will reveal more if made just after coughing, when the bronchi are emptied of mucus, etc.

Prognosis.—If Osler's dictum, that pneumonia is the "true friend of the aged" be correct,—and I have no doubt but that it is,—I think we may, with equal propriety, term it the arch enemy of the children, for our prognosis must always be a guarded one, and serious when it appears in the course of nephritis or is superadded to one of the eruptive diseases.

If now an examination of the blood be made the leucocyte count will usually be found as high as from 20,000 to 30,000 and in severe cases even 50,000.

Treatment.—Holt tersely remarks that while little may be done for the pneumonia much may be done for the child. The first and most necessary condition for the child's welfare is a light, airy room, well ventilated and free from draughts, with the temperature at or about 65° F. How often do we see these little sufferers, gasping for much needed air, in hot, close, ill-ventilated rooms, with doors and windows shut tight, revive and rally when simply a window is opened. The need for oxygen is great, and it may often be better obtained by taking the child into the open air than by the use of the oxygen tanks and this even in the coldest weather. The child's position should be changed frequently so as to avoid stasis.

The diet, such as they can be gotten to take, should consist of light soups and milk, giving water *ad libitum*.

For the relief of pain I know of nothing better for local application than mustard paste, mixed with either flour or a small quantity of linseed meal, in the proportion of one of the former to three to five of the latter. Such applications as poultices, mineral pastes, etc., are mentioned only to condemn them. At best they do no good, and I am sure I have seen

instances where they have been positively harmful. By their weight they increase the work of the already over-burdened chest muscles and surely limit the chest expansion. The pneumonia-jacket is useful if the child is to be taken into the open air in cold weather, not otherwise, and in any event if it is desired to apply heat, which is of doubtful utility, a piece of flannel or a half dozen thicknesses of gauze wrung out of hot water and covered with a bit of oiled silk, answers every purpose, is at least clean, and does away with the disgustingly filthy mass called by courtesy a poultice. Cold applications, such as the ice-bag, are highly thought of in some quarters, but seem to me of questionable value. Leeches, blisters, liniments applied on lint, etc., all have their advocates, but if we bear in mind that pneumonia is a self-limited disease and that our principal object is to conserve our little patients' strength and to make them as comfortable as possible, it will likely occur to most of us that these things hamper and hinder nature rather than assist her in doing her larger part.

It is sometimes necessary to administer opium, and it has always seemed good practice to give it alone rather than in combination with other drugs, using small doses, carefully observing results, and discontinuing as soon as the need for it has passed. Dover's powder is perhaps the best form, though the camphorated or the deodorized tincture may be used in appropriate doses. Codeine is of value, especially if the child in addition to its pain be fretful, nervous, and restless. It is rarely necessary to resort to the use of morphia hypodermically.

The temperature is best controlled by cold sponging, followed by an alcohol or bay rum rub, or the cold pack, using the latter for from ten to twenty minutes, as the individual case may seem to demand. In some cases the application of cold seems to excite and add to the nervousness of the child. Here it is perhaps as well to pay little heed to the temperature and rely more upon the nervous symptoms as an indication for the use of antipyretic measures. Cold applications are to be preferred though small doses of antipyrin or phenacetin may prove useful.

Sleeplessness, delirium, and restlessness are best relieved by tepid baths, cold to the head, in the form of the ice-bag, or by the use of

sodium bromide in doses appropriate to the child's age.

If the cough be troublesome, inhalations of creosote, turpentine, or eucalyptus may be used with decided advantage; and if there is a large amount of thick, tenacious mucus, such as is often seen in the early stages, the inhalation of steam from lime-water is of decided value.

Stimulants.—The use of alcohol in some form is generally necessary in the cases following or accompanying diphtheria, scarlet fever, etc.; and even in some of the primary cases its judicious use is of material benefit. Care and judgment are needed in its administration, and it should not be given as a routine measure simply because the child has pneumonia. The indications for its exhibition are a weak, rapid, irregular, or compressible pulse. My preference is for whisky or champagne, and these would better not be given in milk or any article of diet. Used during the crisis the amount needed is usually greater than at any other time.

Strychnine, in doses at from 1-300 to 1-100 of a grain, is also productive of good in certain cases. In those cases of pronounced congestion where heart-failure seems imminent a hypodermic injection of nitroglycerine, gr. 1-500, may be given to a child a year old with much benefit.

I have found that in most of the less severe types, the drug most satisfactorily meeting these indications is the aromatic spirits of ammonia, given in doses of from two to ten drops every two hours in simple elixir. This acts both as a respiratory and cardiac stimulant, and to my mind is to be preferred to the other preparations of ammonia. Camphor is also useful.

Creasotol is highly recommended and may be administered in syrup of ipecac and emulsion of sweet almonds, giving from four to fifteen grains daily during the first year, from fifteen to forty-five grains daily up to the fourth year, from forty-five grains to one drachm to a child of five or six years and from one drachm to seventy-five grains to a child of ten years.

In respiratory embarrassment atropine, gr. 1-400, or caffeine, gr. $\frac{1}{8}$, may be used to tide the patient over the period of depression. Oxygen, too, is sometimes of value. This, however, should always be given with a liberal admixture of air, using from two to three liters every half hour to an hour. The various sera

prepared for use in pneumonia have not as yet been of much demonstrative value, though we have found the antistreptolytic serum of Stearns and the antistreptococcic serum of Parke, Davis & Co. to be of undoubted value in cases complicating scarlet fever where the presence of the streptococcus could be demonstrated. We have also tried the effect of antitoxin in those cases associated with diphtheria; the results have, however, not been altogether satisfactory.

In the way of preventive measures, it should be our endeavor to treat carefully every case

of cold or bronchitis to remove enlarged tonsils or adenoids and to instruct parents of children prone to catarrhal troubles how to properly protect them.

In cases of apparent delayed resolution, the trouble will usually be found to be an empyema abscess of the lung, or a lighting up of tuberculous processes. These, of course, are to be met with appropriate measures.

The administration of tonics, such as iron, arsenic, and cod-liver oil, during convalescence is to be commended.

SOUTHERN TRAVELS

BY C. J. RINGNELL, M. D.

MINNEAPOLIS

I left Minneapolis in the middle of February to spend my vacation in the South. Having previously sailed from New Orleans for Havana, I decided to go by the Florida East Coast Railway to Knights Key and from there to Havana on the trim little steamer Halifax. From Miami to Key West is 155.84 miles. The railroad is completed over and between the numerous keys as far as Knights Key. The remaining distance to Key West is about 40 miles, which will be completed before very long. Then the passenger can take the sleeper in New York or Chicago and remain until he reaches Havana. (The cars will be run onto a ferry at Key West.)

It is a very unique railroad, running as it does, out into the Gulf of Mexico far from the mainland. The distance between some of the keys exceeds three miles, and the depth of the water forty feet. Concrete is used for the building of the viaducts.

On the way down I met an agent for a town-site company, who is locating a town at Grassy Key. This island contains about 700 acres.

The climate in this part of the gulf is very good, with plenty of sunshine, fresh air, an even temperature, and no fogs. The bottom of the gulf, in most places, is covered with white sand, and in places one can wade out for half a mile before the water reaches up to the waist. Consequently, bathing can be enjoyed all the year round. The southern waters are full of sharks, but there is no danger where there is an outside reef, as there is practically all along

the keys, and the water is shallow. The shark confines himself to reasonably deep water and does not take any chances of passing over reefs where the water has a variable depth, as is the case here on account of the tide.

Fishing is excellent all along the coast of Florida.

These keys, with the regular and efficient railroad service they now have, are bound to become the playground of the health and pleasure seeker. Before many months there will be hotels and boarding houses ready to look after the visitor.

It is sometimes one of the most difficult matters to decide where to go for a complete change in the winter.

This is my fourth vacation in the semitropical and tropical countries, and each time I am getting more fond of this part of the world.

My advice to the tired-out practitioner or his patients, who are so situated, would be to get away from the beaten path of travel, like California, San Antonio, and the upper coast of Florida, and go where you need fewer clothes, get simpler foods, harder beds and more exercise.

In going farther south, a little knowledge of Spanish will come in very handy, as it is the language of most of the islands in the West Indies, as well as of Mexico and Central and South America. English, however, goes a long way when out traveling.

The boat leaves Knights Key every other

day during the season, arriving at Havana the next morning at 6 o'clock.

Standing on deck as we approach the coast of Cuba, Morro Castle can be seen long before the outlines of the city come into view; but soon the white city by the sea seems to rise out of the water. There it lies peacefully by the frowning Morro, spread out like a white fan, basking in the glorious morning sunlight. A city founded four centuries ago, the center of Spanish culture, and of the commerce and wealth of the West Indies, long before its northern neighbors had come into prominence, Havana, with its population of 300,000, is entirely different from any other city on the western hemisphere. It is a miniature Paris. Travel where we may in the West Indies, Central America, and Mexico, there is always a longing for another long visit at Havana.

As our ship glides by Morro Castle and Cabanas fortress, we notice that the mouth of the harbor is only about a fifth of a mile across, and the Machina bay, where all foreign ships come to anchor, between two and three miles wide. The harbor is land-locked and affords protection to several hundred vessels at a time. The lighterage interests are very powerful in Cuba, and passengers and cargoes from foreign ships are discharged by lighters.

The wreck of the Maine is still in the harbor, and as the American tourist surveys the remains feelings of gloom and grief take possession of the soul. But turning towards this little gem by the water, where but a few years ago, in the early morning, the crack of the carbine and the grating of the garrote added new numbers to the already untold list of martyrs, the clouds begin to disperse, and the sunlight bursts forth in all its glory, and on top of the flagstaffs of Morro Castle and Cabanas fortress, with its dungeons, the lone-star flag is floating in the gentle breeze, proclaiming to all the world the freedom and independence of the "Queen of the Antilles." And, may she forever remain free!

Havana is a city of streets, plazas, boulevards, magnificent churches, and massive residences. Some of the streets are so narrow that cabs cannot meet, and it is out of the question to run street cars through them. Others, again, are wider and have street car lines, but as the car comes along the pedestrian must enter a doorway or take the opposite side of the street in order to avoid getting hurt. The streets are well paved and clean.

The stores are replete with the best goods the markets afford. There are jewelry stores with a million and a half dollars' worth of goods, and diamond merchants who carry enormous stocks for a city of this size. The Spanish people, and the better class of Cubans, are good dressers.

The residences are generally of one or two stories. They are built of limestone and rough marble work called *mamposteria*. The walls are from one to three feet thick, the doors high and massive, and the windows reach almost to the ceiling and are protected by iron or wooden bars and ornamental grilles. These grilles project into the street for a few inches and may be plain or highly ornamental, depending upon the taste and means of the owner. No glass is used, but inside the grilles slat blinds or solid shutters take its place. In the evening these are thrown open, and the public has a chance to see the interior of the house and its occupants. The floors are tile or cement. The ceilings must be, according to the building regulations, at least 18 feet high, but, as a matter of fact, they are generally from 20 to 30 feet. The house is built around a court or patio, which insures a free circulation of air at all times, and the sleeping apartments open up into the patio. The court is the gathering of the family and visitors in the evening. It has tiled walks, flower beds, shrubbery, different kinds of tropical trees and singing birds of every description. Every well-arranged house has a good shower bath, which is used extensively in the tropics.

They spend more money for living and beautifying their homes than the people in the North.

There are over 4,000 licensed cabs, or miniature victorias, in Havana, and everybody rides, from the banker to the washer-woman delivering her wash. The fare is only 20 cents Spanish silver, and the cabs are as nice and neat as the ones we see on the streets of our larger cities.

The cafes are well patronized in the evening and some keep open all night. There are numerous hotels, good and bad, ranging in price from \$2.50 to \$10.00 per day, American plan. The Sevilla, with bath in every room and American beds, has just been opened. It is a magnificent hotel, with reasonable prices.

The city has a splendid water supply and will soon have a modern sewerage system. The general health of the people is good.

In 1886, Dr. Finlay, now chief sanitary officer of the island, began to promulgate the theory that the mosquito, probably, was the agency through which the yellow fever was transmitted, but no experiments were made.

The demonstration of this fact was made by a board of investigation sent to Cuba in the summer of 1900, by Surgeon General Sternberg, of the U. S. army. This board consisted of Major Walter Reed, surgeon in the U. S. army, and Acting Surgeons James Carroll, Aristides Agromonte and Jesse Lazear. The Americans had tried for a year and a half to diminish the disease and mortality of the Cuban towns, by general sanitary work. The general conditions were improved considerably, but yellow fever continued as before. The board then came to the conclusion that its transmission was probably due to an insect. General Leonard Wood, himself a physician, at that time military governor of Cuba, gave Dr. Reed and his associates every assistance needed in order to carry out the experiments.

Volunteers from the American army came to the front and permitted themselves to be placed in a screened room, where mosquitoes infected with yellow fever were confined. After being bitten they had yellow fever, while two non-immune men in the mosquito-free compartment, did not acquire the disease although sleeping there thirteen nights.

Dr. Reed demonstrated that the disease is transmitted in this manner only, as volunteers handled soiled clothing and bedding from yellow fever patients and slept in the rooms where they were for twenty days without contracting the disease, but were subsequently bitten by infected insects and had yellow fever.

The camp where these experiments were carried out was located four miles from Havana. Dr. Carroll, a member of the commission, allowed himself to be bitten by a mosquito that twelve days previously had filled itself with the blood of a yellow fever patient, and he had a severe attack of fever. This was before the camp experiments were carried out, and his was the first experimental case. Dr. Lazear experimented on himself at the same time, but was not infected. Some days later, while in the yellow fever ward he was bitten by a mosquito and noted the fact carefully. He contracted the disease and died, a martyr to science and a true hero. No other fatality occurred among the brave men who exposed themselves to the infection of the dreaded disease.

Here are the conclusions of the board of investigators who did so much for mankind:

"1. The specific agent in the causation of yellow fever exists in the blood of a patient for the first three days of his attack, after which time he ceases to be a menace to the health of others.

"2. A mosquito of a single species, *stegomyia facia*, ingesting the blood of a patient during this infective period is powerless to convey the disease to another person by its bite until about 12 days have elapsed, but can do so thereafter for an indefinite period, probably during the remainder of its life.

"3. The disease cannot in nature be spread in any other way than by the bite of the previously infected *stegomyia*. Articles used and soiled by patients do not carry infection."

Yellow fever was introduced into Havana from Vera Cruz, Mexico, during the building of Cabanas fortress, between 1763 and 1774. From that time until 1901, when Col. Gorgas, of the medical department of the U. S. army, instituted measures to eradicate the scourge, thousands had succumbed, and Havana was the pest-hole from whence the disease was distributed to our own shores.

No cases have originated in Havana since September, 1901.

(In a subsequent letter, I shall try to tell what I saw of Col. Gorgas' work at the Isthmus of Panama.)

It is a very difficult matter to get at the real facts regarding the yellow fever situation in other Cuban towns, at the present time. From what I can learn there are cases in Santiago de Cuba and Cienfuegos. As I am writing this letter, I am practically in quarantine here in Havana. I came from Jamaica to Santiago de Cuba, April 5th, but upon the closest inquiry and investigation in Santiago, I failed to elicit any definite information in regard to the real situation. It hurts a city, commercially, to have such a reputation, and therefore it is kept quiet. I also visited Cienfuegos and while there the same indefinite information was given.

While at Colon, Panama, Dr. Pierce, the quarantine officer, stated that the disease had been reported present at the above points. As I have been at infected centers, it is necessary for me to report at 9 a. m. and 3 p. m. at the U. S. Marine Hospital office for six successive days before I am permitted to leave Cuba for the states. This rule applies to all persons coming from such centers.

People living in Havana are permitted to leave upon presentation of certificates from some reliable and well known citizen, to the effect that they have lived exclusively in Havana for a specific time. The quarantine office then issues a clean bill of health.

Since the 6th of April there has been quarantine in the states, against every Cuban port except Havana, but on general principles this port will undoubtedly be included before very long. Texas makes no exception, but has strict quarantine against all Cuban ports.

OPTIC NEURITIS DUE TO CHRONIC EMPYEMA OF THE FRONTAL AND ANTERIOR ETHMOIDAL SINUSES

BY WILLIAM R. MURRAY, M. D.

MINNEAPOLIS

Patient, male, aged 35 years; occupation, farmer; referred by his physician, July 11, 1907.

A diagnosis of sinus empyema had been made, and the patient was referred to me for operation.

The subjective symptoms had been unusually severe; intense headache, dizziness, nausea, vomiting, and gastric and intestinal disturbances extending over a period of one year.

Examination of the right nostril showed pus in the middle meatus and covering the anterior end of the middle turbinate bone; middle turbinate enlarged and edematous; left nostril no discharge of pus; middle and inferior turbinates moderately hypertrophied.

Examination of the nasal accessory sinuses showed chronic involvement of the right frontal, anterior ethmoidal, and maxillary sinuses.

On questioning the patient in regard to the condition of his right eye, he stated that his vision was much poorer in that eye than in the left, and that it had been bad for the past year.

Examination of the eyes showed the following: Right eye, vision 20-100; no pain or tenderness on palpation of the eyeball; extra- and intra-ocular muscles, normal; ophthalmoscopic examination showed optic neuritis, retinal veins congested, and edges of disc blurred. Visual fields contracted for white and colors, and a small relative central scotoma. Left eye, vision 20-20; extra- and intra-ocular structures, normal; visual field, normal.

On July 11, the date of examination, I resected the anterior half of a large and edematous middle turbinate. On July 13th I removed the anterior portion of the inferior turbinate, and made a large and permanent opening into the antrum, by removing a portion of the nasal wall of the sinus. One week later I did a modified Killian operation on the frontal sinus and anterior ethmoid cells. The patient was discharged from the hospital one week after the

operation with the wound healed and the vision in the right eye 20-30. Four days later the vision was normal, with normal visual field.

Involvement of the optic nerve due to sinus disease, usually disappears rapidly after proper operative measures have been directed to the affected sinus. Fish¹, in his reference to published cases, cites a case of Coppez's in which vision improved from 1-20 to normal in eight days; Brawley's, from 1-5 to normal on the fourth day; Wurdemann's, from 1-6 to normal in a few days; Mendel's, blind at time of operation, later had 2-3 vision. He also refers to a case of Richet's in which, by opening the frontal sinus, vision was restored to normal in an eye blind for more than a month, and to a case of Fliess's, the patient being "able to read the finest print after being about blind for months." Black² reports a case with vision 6-LX returned to normal in four weeks, after probing the frontal sinus. In this case the onset of the nerve involvement dated back one year, the patient stating that his sight became affected one year before the date of the examination, and that it had been "bad" during that time. Improvement in vision dated from the time of operation on the frontal sinus and anterior ethmoidal cells, and was normal in ten days.

Various writers have advanced different theories to account for optic-nerve involvement in connection with sinus disease, and doubtless these different theories may each cause an optic or retrobulbar neuritis in individual cases. It would seem that the posterior sinuses, sphenoid and posterior ethmoid, would be most likely to cause such a complication. Onodi³ points out the intimate relationship that exists between the accessory sinuses, especially the posterior sinuses, and the optic nerve, and to the great irregularity in the conformation of these sinuses. The same author⁴ shows that the posterior ethmoid

cells frequently extend into the sphenoid wings, and that in all cases in which the optic canal is connected with the posterior ethmoid cell, the septum separating them is as thin as paper, and that the extremely thin bony partition may favor propagation of disease. He also states that fissures in the optic canal and in the posterior side-wall of the sphenoid cavity may be the direct cause of perineuritis optica.

Schroeder⁵ refers to the extreme thinness ($\frac{1}{2}$ mm.) of the bony plate between the posterior sinuses and the orbit, and also to the dehiscences that may be present, so that the mucous membrane of the sinus may be in apposition with the sheath of the optic nerve.

Paunz⁶ states that eye affections may be caused by nasal affections in the following ways: "(1) Through direct extension; (2) by way of the blood and lymph passages; (3) of reflex origin."

Cutler⁷ believes that intra-ocular disease due to sinus involvement should be regarded as excep-

tional and due to exceptional conditions, such as anomalous arrangements of the vessels or lymphatics.

Fish⁸ states that the secretion in the sinus causes a "passive orbital hyperemia or engorgement, as the vessels draining the mucous membrane lining the nasal and pneumatic cavities, drain principally into the vena ophthalmica." This is also the theory of Ziem. Fish later modifies the passive orbital hyperemia theory and considers the circulatory disturbance as due to a vasodilation resulting from an irritation of the sympathetic by the secretion in the sinus.

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SUPPURATING PYELONEPHRITIS

By F. E. WALKER, M. D.

Surgeon to Our Lady of Lourdes Hospital.

HOT SPRINGS, SOUTH DAKOTA

Ten years ago Mrs. M. complained of pain in the left side, which for the past six years had steadily grown worse until last November, when she found it necessary to take to bed, and for the first time called in a physician. She knew nothing of the nature of a causative factor regarding her trouble, save a fall many years ago, while playing with other children. As near as she could remember, the fall occasioned no discomfort and did not put her in bed. At twenty-one she married, and soon after the birth of her second child the pain in the side referred to was first noted. She described it as a dull, heavy, dragging pain, and oftentimes she would have to lie down for several hours. Upon examination the left side was found to be hard from the ribs down to the crest of the ilium. There was pain on pressure, great difficulty in urinating, and she was constipated all the time. Her temperature was 101.2° - 102.8° ; respiration, shallow and frequent; pulse, 98, quick, tense, and hard. The features were drawn, eyes cloudy, pupils dilated, and tongue coated. There was anorexia, and she was sleepless, restless, and very nervous. The urine was diminished; amount (in 24 hours), 936 to 1169 cc.; sp. gr., 10.28 to 10.30; consistence, viscid and stringy; color, whitish-yellow; odor, ammoniacal

and foul; reaction, alkaline; urea decreased, also uric acid; albumen, in abundance, even after being filtered, from pus; no casts, but many bacteria; test for tubercle bacillus, nil; after remaining in the vessel over night a very thick, stringy mass settled in the bottom, and was easily lifted from the container without separation.

After a course of tonic treatment she was operated upon on January 26. An incision was made extending from the lower border of the eleventh rib, along the outer border of the sacrolumbalis muscle, midway between the crest of the ilium and the twelfth rib. After incising the skin and subcutaneous tissue the knife grated harshly on the parts underneath, requiring the heavy cartilage-knife to procure an opening into the peritoneal cavity.

Upon the introduction of the finger, a hard, gristle-like mass was felt. The tissues were so much like cartilage that nothing could be gained by the incision; therefore another incision, extending upward from the first, was made, and with the divided parts retracted an examination was possible. The hard substance referred to extended from the lower border of the twelfth

rib to the crest of the ilium with the intestines intimately adherent to the same. A small semigristly mass about the size of a walnut was all that could be demonstrated as kidney structure. This mass was incised throughout, but no pus or blood came away although the cavity was large. Extending downward from this kidney remnant, a canal extended as far as the index finger could reach. The canal was supposed to carry the pus and other accumulation into the bladder. It was of the cell-like cavities, surrounded the small mass and appeared to radiate in all directions from the central opening.

There was little blood lost during the operation, but, unfortunately, at this stage the patient gave signs of dissolution, and, hastily dressing the wound, every attention was directed towards resuscitation. All efforts proved futile, the patient expiring in less than two hours. The post-mortem resulted in the following findings: lungs greatly collapsed, with exudate on surface; heart, normal in position, but slightly enlarged; pericardial fluid, about two ounces; heart-muscle, flabby with thinning of walls; left ventricle, somewhat weakened; both lungs very small and adherent throughout; liver, enlarged and quite hard, presenting several scars the size of a hazelnut on its anterior surface; gall-cyst, filled with fluid; pancreas, very hard and also adherent throughout with the stomach, duodenum, and transverse colon; spleen, normal; right kidney, small and soft, cut surface appearance of normal structure; left kidney, entirely gone, save the small mass elsewhere mentioned; the ureter on this side could not be found, and was supposed to have become completely obliterated. A solid mass, cutting, as before stated, like cartilage, extended from the twelfth rib to below the crest of the ilium, being about two inches thick and four inches broad, and reaching almost to the linea alba. Closely united to this mass was the transverse colon, the whole of the descending colon, a small part of the sigmoid flexure, and a portion of the small intestines. The canal alluded to when describing the operation and which was supposed to have entered the bladder, was found to end abruptly some two inches from it. However, the remaining ureter here presented itself, being about one and one-half inches long, which, commencing at this canal, ended at the usual place in the bladder, and was apparently normal in all respects. The uterus, tubes, and ovaries were normal and in a healthy condition; bladder, contracted, walls fully five-eighths of an inch thick and filled with foul-smelling, whitish-yellow fluid, the consistency of bean soup.

Specimens of the heart and kidneys for microscopic examination were prepared and noted. The kidneys showed marked endarteritis with an increase of interstitial connective tissue, especially on the periphery, where the fibrous hyperplasia, with consequent eroding and obliteration of glandular tissue, had resulted; the glomeruli were greatly shrunken; in some areas there was evidence of an acute inflammatory process, with infiltration of tissue by leucocytes; renal epithelium, in different stages of degeneration and destruction present; tubules dilated in some places, perhaps as a consequence of the damming back of the pus and secretion. The heart showed marked increase of connective tissue between the muscle cells; also an atheromatous condition of the vessels, but not to such a degree as in the kidneys; pericardium increased in thickness and muscle cells showed some degeneration, and whether or not the condition was due to the method of preparation is questionable; heart-cells showed some degeneration from the myocarditis present.

The conclusions reached are that the suppurative process extended over a longer period than is usually met with, and that inadequate nutrition, poor surroundings, lack of exercise, continued exposure to cold, previous lung trouble, and improper hygiene added to the more rapid destructive process of the last few weeks. The kidneys were chronically diseased, but also showed signs of an acute inflammatory process superimposed. The arteriosclerosis was not regarded as systemic, but that it resulted from the interstitial nephritis, and this in turn was followed by changes in the heart vessels.

SUCCESS AND FAILURE IN NAUHEIM CURES

Paul E. Franze of Bad Nauheim, Germany, says that success at Bad Nauheim depends on the kind of heart lesion that the patient has and the stage of the lesion. The indications are for the treatment of initial and medium stages of lesions. It is essential that the patient observe while under treatment certain regulations of his way of living. Failure depends on unsuitable cases being sent, and injudicious behavior on the part of the patient. A variety of complaints aside from heart disease are benefited by this treatment. Such are neurasthenia, diseases of the female generative organs, scrofula, rickets, bronchitis, gastric, and intestinal troubles. The author describes the effects and results of the use of these baths.—*Medical Record*, May 9, 1908.

THE SURGICAL TREATMENT OF BUNIONS*

BY CHARLES H. MAYO, M. D.

ROCHESTER

The primitive foot was probably used for grasping objects, the great toe being situated farther back, somewhat like but less marked than the thumb on the hand, and as is now seen in some of the lower animals. Confinement of the foot, incident to civilization, has possibly tended to the advanced position of the great toe.

The characteristic of the foot, with a tendency to bunion is, that the great toe when straight is from one-fourth to one-half inch longer than the second toe.

Operation.—A curved incision is made down over the inner side of the metatarsophalangeal joint, the skin being lifted in the flap, which is separated from the bursa. A curved incision ("horse-shoe") is now made around the bursa with its inner base forward left attached to the base of the first phalanx, its inner surface being synovial membrane and continuous with the anterior surface of the joint.

The head of the metatarsal bone is then removed with heavy forceps, the section also removing two-thirds of the anterior portion of the bony hypertrophy on the inner side. The remainder of this projecting bone is cut away to the level of the shaft of the metatarsal. The cut end of the metatarsal bone is now rendered as smooth as possible by Rongeur forceps, and the bursal flap turned in to the joint area in front

of the bone, where it is held in place by one or two catgut sutures. We thus utilize an already-formed bursa to secure and maintain a movable joint, which works in a movable splint, the shoe, and thereby secure an immediate result, which is obtained with difficulty in other joints by transplanting fatty tissue into the joint area to prevent bony union.

CEREBELLAR HEMORRHAGE; REMARKS ON THE FUNCTION OF THE CEREBELLUM

Joseph Collins, of New York, says that the victims of cerebellar hemorrhage rarely survive. He presents a study of an interesting case of cerebellar hemorrhage in which the patient is living, but with permanent disability. The chief function of the cerebellum is to regulate coördinated movements. The middle lobe, or vermi-form process, is functionally the most important. Unilateral ablation results in disturbances of equilibrium, peculiar attitude, disordered sensibility, and ocular symptoms, with disorders of speech in human beings. There is no true paralysis but motor paresis. Displacement of the eyes occurs, with peculiar attitude of the head. Symptoms of cerebellar hemorrhage may occur suddenly or develop slowly, preceded by headache, dizziness, and retraction of the head.—Medical Record, May 9, 1908.

*Author's abstract of a paper read before the Western Surgical and Gynecological Association, Dec. 31, 1907.

PHYSIOLOGIC CHEMISTRY AND DIETETICS

CONDUCTED BY

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THE PRESENT CONDITION OF THE DISCUSSION CONCERNING FAT-SPLITTING IN THE STOMACH.

The first serious denial by Inouye that Volhard's finding of a fat-splitting ferment in the stomach was correct, was shortly refuted by the work of Zinsser and Fromme. Falloise was then

able to confirm the findings of the writer on newly-born rabbits by experimentation on older rabbits. Falloise maintains that the splitting ferment in the rabbit stomach cannot come from the pancreas, as the pancreatic duct in this animal opens into the intestine 30 to 40 cm. below the pylorus. He was also able to find a fat-splitting

ferment in the extract of the gastric mucosa of a dog from which the pancreas had been removed. (Archiv. internationales de Physiologie, Vol. 3.)

Both Heinsheimer (Deutsche med. Wochenschrift, 1906) and Laquer (Hoffmeister's Beitrage, 8) were able to find a lipase in Pawlow "small stomachs" cut off from all connection with the gut.

Meyer (Muench. med. Wochenschrift, 12) found a fat-splitting ferment in the stomach. He considered this, however, to be due to regurgitation from the intestine, as he was not able to find the ferment in the stomach of a patient with a carcinoma which closed the pancreatic duct.

Rietschel (Jahrbuch f. Kinderheilkunde, 65) found no lipase in the secretion from a Pawlow small stomach in pigs from two to four weeks old, confirming the work at the Pawlow Institute at London. The similar work of Heinsheimer, however, in which the lipase was found, was done on dogs' stomachs.

Sandmeyer and Rosenberg found relatively good digestion of the fat after pancreas extirpation, which argues for a second fat-splitting ferment in the body. There is, of course, the possibility, since the work of Pawlow and Baldireff, that this is from the intestinal secretion.

O. Cohnheim seems to voice the general opinion when he says (Handb. d. Physiologie des Menschen): "There can be no doubt since Volhard's work that a strong fat-splitting ferment is present in the stomach." And again: "The formation of a fat ferment by the stomach is not proved, but wholly possible." If the work of Laquer and Heinsheimer stands, it is proved, as the ferment in the Pawlow small stomach can come from no place except that organ itself.

SEDGWICK.

SACCHAROBUTYRIC PUTREFACTION

Dr. C. A. Herter's recent studies upon saccharobutyric intestinal putrefaction are of very practical interest to the clinician. The conclusions he draws are that in disorders of this type, the anaërobic bacteria of the bowel attack, most readily, carbohydrate foods, and, secondarily, those proteins which yield tryptophan in the course of their disintegration.

While large quantities of fat, present in the intestinal tract, may be split by bacterial action, he considers them as mainly contributive to putrefactive changes of this type by the mechanical hindrance they offer to the absorption of proteins, thus prolonging the exposure of the latter to bacterial attack. Smaller quantities of fat,

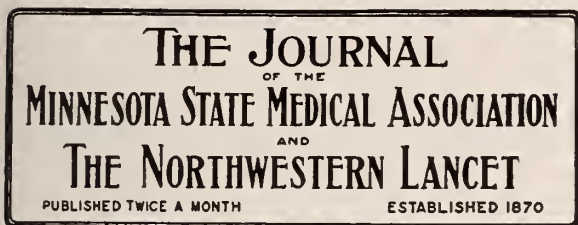
especially those of easy liquefaction, do not have this effect.

He suggests the choice, therefore, in these cases of a diet of milk, fermented milk, minced beef, and gelatin. Some of these do, and some of them do not, accord with the principles he so ably supports. Gelatin is, unquestionably, of great value, not only because it does not yield the indol-forming putrefacts, but because, as Murlin has recently shown, it is more largely substitutive for other proteins than earlier observations had led us to believe. The casein of milk and the myosin of meat are objectionable by the contrary sign that they do form tryptophan. Cream, bearing a larger proportion of fat and a lesser proportion of casein, is, therefore, to be preferred to milk. Fermented milk is still better, not only because it offers a sugar-free milk (a point of mooted consequence), but because it affords a disintegrated, and therefore a more rapidly digested, casein, and, also, lactic acid, which, in itself, whatever may be said of the influence of the lactobacillus, *per se*, appears to inhibit the growth of the bacillus *aërogenes capsulatus*.

That lactose, to return to the mooted point mentioned above, or maltose, the sugar of digestion,—both disaccharides,—or the dextrans, which give immediate rise to maltose, need to be feared as subjects of this form of bacterial attack, may be doubted. The monosaccharides, together with saccharose, which, requiring inversion in the stomach or bowel in order to its absorption, comes physiologically within the same group, are the carbohydrates to be especially avoided as the easier food of the anaërobic bacteria.

One far-reaching and always detrimental influence in cases of saccharobutyric fermentation may be suggested, namely, the matter of delay in food-transit. Impairment of motility, in any part of the gastro-intestinal tract, as well as faulty secretion and arrested absorption, involves food-retention and, therefore, an enlarged opportunity for bacterial attack. Dr. Herter wisely suggests the reduction of the demand for food, which needs to be minimized in these cases, by means of prolonged recumbency. He points out the influence which intestinal epithelial atrophy has upon saccharobutyric fermentation, but apparently he does not recognize the possibly causative relation of the latter to the former, as well as the exaggeration of the latter, which the former, by its interference with secretion and absorption, may induce. Their interrelationship establishes a vicious circle, which is hard to break.

BEARD.



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839-840 Lumber Exchange.....Minneapolis

MAY 15, 1908

FOR THE CHICAGO MEETING

The Milwaukee railway has generously offered one or more special cars for the men going to Chicago if reservations are made in advance and if there be fifteen or twenty applications. At least two cars should be required for the men and their wives who go from the Twin Cities alone, and with others from the Northwest who go on the same train three or four cars should be required.

This arrangement will make the trip very pleasant.

Reserve your berths for the "Pioneer Limited," leaving Minneapolis at 8 p. m., June 1st.

THE LAYMEN'S CRUSADE AGAINST TUBERCULOSIS

Samuel Hopkins Adams, in Collier's Weekly for March 21st, writes a strong article on what he terms "The Holy War of To-day."

His pen has done so much for medicine and for the protection of the innocent against nostrums and quacks that when he takes up the subject of tuberculosis he will do what few medical men can accomplish. The paper for which he writes has a very large circulation, and his ar-

ticles are read by thousands who would pass over anything on tuberculosis if written by a medical man. He calls attention to the coming International Congress on Tuberculosis to be held in Washington in October. "Representatives, official and unofficial, from practically all the civilized nations will attend. Never before has there been so general a movement against a common enemy; so universal response to a call for 'the parliament of man, the federation of the world.'"

The essentials of the problem are the same here as in every other part of the world. No nation is exempt, and the conditions are much the same everywhere.

"The three B's of tuberculosis hold universal sway: Bad Air, Bad Food, Bad Sanitation. There is the enemy in concrete form, and, back of it, its war-gods, greed and ignorance."

The Congress has for its main purpose mainly to teach some hundreds of millions of people what tuberculosis is, and to enlighten and enlist the public in its extermination.

The attendance should be very large if good, wholesome advertising is of any value. It will bring together medical men and those who are devoted to organized charities and who see the practical side of the great question.

As a matter of fact the business side of the eradication of a needless disease that destroys lives, interferes with the earning of a livelihood, and creates the burden and care of consumptives, should appeal to the business men of the country. If men are once thoroughly aroused to the necessity of scientifically caring for the sufferers with tuberculosis it would not be a difficult or a tedious task to stamp out the White Plague.

So far the public is indifferent, except a certain few who have investigated the subject seriously. If the Congress could secure a live press bureau and keep the newspapers actively interested, America would lead the world in its efforts in extermination.

In the meantime the various local organizations must do what little they can and wait for further and widespread aid.

THE CAUSES OF HEMIPLEGIA

Paralysis of one-half of the body is so frequently seen by medical practitioners that a careful study of the determining factor is often neglected. A variety of pathological possibilities may be demonstrated, but the diagnosis of the real cause is not always possible. The average physi-

cian considers that most hemiplegias are due to cerebral hemorrhage, but the necropsy findings do not invariably justify such a diagnosis. It would be safer to investigate all such forms of paralysis from the broad viewpoint of diseases of the blood-vessels.

Under this head the diagnostician should consider acute inflammatory states and chronic degeneration of the vessel-walls in which hemorrhages may occur and softening of brain tissue be the result. Not infrequently small aneurysms are found in the terminal vessels, and transient hemiplegias follow.

Increased blood-pressure from unusual physical strains in persons who have diseased vessel-walls are occasionally the direct factor in a sudden hemiplegia. The popular idea that a fat, thick neck or an individual of heavy weight who looked upon as full-blooded and prone to hemiplegic attacks, is not fully established. Many instances are recorded of hemiplegias in frail or sparsely built people. This condition is explained by the ex-vacuo theory. The vessels are not adequately supported, and there is not sufficient counter-pressure to check the flow of blood, and not infrequently large hemorrhages are found in this type of individuals.

Obliteration of the vessel from the development of a thrombus, due to deposits from the blood-stream or the closure of the lumen of the vessel from thickening of its walls, are frequent causes of hemiplegia. Where an arteriosclerosis is suspected and when there are prodromal symptoms covering a period of weeks or months manifested by tingling, transient numbness, vertigo, and momentary paralysis, it is usually safe to assume that a thrombus or a gradual narrowing of the blood-tube is the important factor.

Embolism is another element to be taken into consideration, particularly in infective heart-disease or in old diseases of the heart when granulations or calcareous lesions of the valves are present. Other infectious conditions likewise are responsible for emboli, which may lodge in the cerebral vessels and give rise to hemiplegia. The diagnosis is not always possible, but if the patient is suddenly seized with a convulsion or is excited and is afterward found hemiplegic, an embolus is most probable.

It is obvious that these three possibilities must be carefully worked out, as each demands a form of treatment that is radically different.

Syphilis as a factor in hemiplegia is exceedingly important. Specific arteritis, gummata, and focal meningitis or cysts may give rise to sudden

or gradually developing hemiplegia in syphilitic subjects.

Tumors of the brain, abscesses, local softenings due to toxins, a dilated lateral ventricle, and uremic states from renal disease are other possible causes. All of these diseases, with their ramifying dangers, must always be considered in the study of all apoplectic states.

It is evident that the majority of hemiplegias are due to disorders of other organs than the brain, but as the territory involved is the nervous system it is necessary that the internalist should give due consideration to the nervous system in diagnosis and treatment.

AGAIN, WHO IS WHO?

Under the above caption we gave, in our last issue, some reasons why a medical man should belong to a medical society; and we also referred to the fact that some medical men—perhaps we only implied this—do not always get their names on the roster of their societies, and thereby suffer a penalty of not being published in the list of "Who Is Who?" Of course, the delinquents—some of them at least—are bad business men. Fortunately, our remarks, or, it may be, other causes, have brought in quite a large number of renewals of dues.

But we started out to call attention to the opening paragraph of Dr. Nippert's paper in this issue, wherein the reasons for belonging to a society are well set forth. A reading of this paragraph will lead to a careful, also a pleasant and profitable, reading of the entire article.

REPORTS OF SOCIETIES

WINONA COUNTY SOCIETY

A midquarterly meeting of the Society was held at Winona on May 5th, with 10 members present. Dr. L. H. Munger, of Winona, read a paper on "Medical Ethics."

J. B. McGAUGHEY, M. D., Secretary.

CAMP RELEASE DISTRICT SOCIETY

The Society met at Winthrop on April 23d, with 15 members present.

Papers were read as follows:

"The Address of the President," by Dr. M. E. Bushey, Arlington; "The Treatment of the Parturient Woman During and After Confinement," by Dr. C. B. Powell, Madison; "Berrean Tuberculin, in the Diagnosis of Tuberculosis," by Dr.

John P. Schneider, Green Isle; "The Corporation Physician: His Duties to His Company and the Public," Dr. F. J. Cressy, Granite Falls; "Letter from Vienna," by Dr. Ludwig Lima; "Sanitation and Quarantine," Dr. H. M. Bracken, Secretary of the State Board of Health.

The public was invited to hear the address of Dr. Bracken, which was given in the evening. It was well attended and highly appreciated.

R. D. ZIMBECK, M. D., Secretary.

THE CLAY-BECKER SOCIETY

The Society met in Moorhead on April 27th, with eight members present. Papers were read by Dr. L. C. Weeks, of Detroit, on "Bright's Disease," and by Dr. F. H. Bailey, of Fargo, N. D., on "The Importance of the Early Recognition and Treatment of Mastoiditis."

Dr. D. C. Darrow led the discussion on Dr. Bailey's paper.

A banquet followed the meeting at Dr. Darrow's residence.

The meeting was a pleasant and profitable one. The Society now has 21 active members.

E. R. BARTON, M. D., Secretary.

RED RIVER VALLEY SOCIETY

The Society met at Crookston on April 28th, with 15 members present. The following papers were read:

1. "President's Address," by Dr. J. C. Cummings, St. Hilaire.
2. "Pleurisy, Etiology, Pathology," by Dr. W. C. Wilson, East Grand Forks.
3. "Symptoms and Diagnosis," by Dr. I. Lemieux, Red Lake Falls.
4. "Treatment and Prognosis," by Dr. O. H. Olson, Erskine.
5. "A Talk on Wiener Clinics," by Dr. H. C. Stuhr, Argyle.

H. H. HODGSON, M. D., Secretary.

MINNESOTA ACADEMY OF MEDICINE

The May meeting of the Academy was held at the Minneapolis club on the 6th inst., with 55 members and five guests present.

The question of the June meeting was raised, and because of the fact that the date of the regular meeting would conflict with that of the American Medical Association in Chicago, it was decided, on motion, to hold no meeting in June.

Dr. W. A. Jones reported two cases of brain tumor, showing the specimens of both cases.

Dr. J. C. Litzenberg read his inaugural thesis entitled: "Hemorrhage of the Suprarenal Capsules in the New-born; with Reports of Two Cases Due to Infection."

Dr. S. Marx White showed prepared specimens from the cases and discussed the subject.

Dr. John Ridlon, of Chicago, the guest of honor for the evening, gave an address on "Some Remarks on Twelve Years' Experience in the Bloodless Replacement of Congenitally Dislocated Hips."

ARTHUR W. DUNNING, M. D., Secretary.

HENNEPIN COUNTY SOCIETY

A regular meeting of the Hennepin County Medical Society was held at 8 P. M. on May 4th. The president, Dr. F. A. Knights, in the chair, and 50 members present.

Dr. F. A. Dunsmoor presented a case of exophthalmic goitre.

Drs. S. E. Sweitzer and H. L. Ulrich presented a case of blastomycitic dermatitis, with slides of organism.

Dr. C. H. Hunter presented a case of shoulder dislocation with wrist-drop.

Dr. C. N. Spratt presented a case with foreign body in the eye.

The Censors reported favorably on the following named physicians, who were duly elected to membership: Dr. R. H. Kinney, Donaldson building; Dr. Jens Ohnstad, 1854 Central avenue; Dr. Chelsea C. Pratt, 917 River Road S. E., and Dr. John T. Litchfield, 401 Globe building.

Dr. M. Russell Wilcox was reinstated.

Dr. S. Marx White moved that the delegates to the State Medical Association be instructed to introduce a proposal to change the constitution of the State Association, so that certain physicians who occupy teaching positions, or are engaged in research and who do not wish to be licensed to practice, may acquire membership in the state and county societies. This motion was referred to the Executive Committee without debate.

Dr. W. D. Shelden read a paper on "A Short Study of Metabolism in a Case of Diabetes." The discussion was opened by Dr. J. P. Sedgwick, and was entered into by Drs. E. K. Green, C. E. Engbert, and J. W. Bell, being closed by Dr. Shelden.

Dr. C. A. Donaldson then gave a paper on "X-Ray Diagnosis of Injuries of the Elbow-joint," illustrated by lantern slides. The discussion was opened by Dr. J. Clark Stewart and entered into by Drs. F. A. Dunsmoor, H. B. Sweitzer and R. E. Farr, and was closed by Dr. Donaldson.

The following were proposed for membership: Dr. George E. Benson, Guaranty building, and Dr. Eleanor J. Hill, Donaldson building.

On account of the meeting of the A. M. A., the June meeting of the Society will be postponed until June 15th.

C. H. BRADLEY, M. D., Secretary.

CORRESPONDENCE

AMERICAN MEDICAL ASSOCIATION COUNCIL ON MEDICAL EDUCATION

MINNEAPOLIS, MAY 1, 1908

TO THE EDITOR:

A most interesting and profitable session of the council was held in Chicago on Monday, April 13, 1908, at which representatives of nearly all the leading colleges and progressive boards of medical examiners and state medical associations were present. The following program was carried out in its entirety and the information made available will be published:

PROGRAM

1. Address of the Chairman, Dr. Arthur Dean Bevan, Chicago.
2. Report of the Secretary, Dr. P. N. Colwell, Chicago.
3. Report of Committee on Preliminary Education.
4. Report of Committee on What Should Constitute a Medical College in Good Standing.
5. Report of Committee on the Essentials of a Model Medical Practice Act.
6. The Character of the State Medical Licensing Examination. (A Discussion.)
7. Practical Ideas Concerning Reciprocity. (A Discussion.)

The information given in the address of the chairman, and the report of the secretary will be of particular utility to the different state boards of medical examiners in relation to applicants for licensure and to the executive officers of the different medical colleges concerning migrants.

By means of colored charts a comparison was possible of the various states in the union as to the amount and kind of preliminary medical education, the requirement of a college degree for licensure, methods of operation of state boards of medical examiners, and other such valuable information. Comparison was made of the various American medical colleges with the European colleges. In one chart the requirements for the practice of medicine in various counties was given from the time the candidate was six years old, i. e., when he enters school. There are relatively few colleges in the United States which compare with the European standard.

It was shown that in the United States there are 161 medical colleges, whilst in the rest of the

world there are only 174, that is, in the thirty countries of which full information was received. Of the 161 colleges in the United States, 39 have been rated by the council as unsatisfactory, and a certain group of other colleges have been given an opportunity to better their requirements, after which they will be rated as satisfactory. Of the 161 colleges, 148 require four years of high-school work, or less, for entrance; two require one year of pre-medical college training, seven require two years, two require three years, and two require four years or a degree. Fourteen other colleges have announced their intention to increase to a two-year collegiate requirement very shortly, and 32 colleges have made provision for the combined six-year B.S. or B.A. M.D. course. This latter course was somewhat severely berated by President Elliot, of Harvard University, who was present at the meeting, on the ground that it was "riddling" the arts and science departments of the universities. Dean Vaughan, of Ann Arbor, however, pointed out that it was necessary on the part of such colleges either to increase the amount of work or diminish the time spent in such work, as otherwise students acquired bad habits. Dean Dodson, of the University of Chicago, took the ground that the origin of such courses was the logical outcome of the elective system inaugurated some thirty years ago by President Elliot himself, which he (Dean Dodson) regarded as the best and most progressive step taken by Harvard.

In Europe it was shown that the age of graduation in medicine varies between 23 and 26, 24 years being the average. It was furthermore stated that in a good many of the European institutions, the twelve years of preliminary medical study approximate to fourteen years of study in the United States; and laxness in the high-schools, academies, and colleges of this country was hinted at.

It was shown that 50 colleges in the United States, either now or in 1910, will require one year of chemistry, physics, biology, and language for entrance.

The character of the state medical license examination received a great deal of discussion, and it was urged that practical examinations be provided, both in the primary or laboratory subjects and in the clinical branches. It was advocated by some of the speakers that the examination be divided into two and possibly into three parts, as follows:

1. In regard to preliminary medical education where it seemed desirable that an estimate of the qualifications of applicants be arrived at by pro-

fessional educationalists, rather than by medical men.

2. The examination in the laboratory and primary subjects to be taken at the end of the first two years of medicine, and that it consists of practical written and oral examinations.

3. That for the clinical subjects, practical written and oral examinations be given at the completion of the course.

By this means the methods of examination for license would be brought more up to date and be more strictly comparable with the advance made in medical teaching where the laboratory or demonstration method has taken the place very largely of lectures.

Minnesota received a great deal of praise, not only for the high standard set by the State Board of Medical Examiners, which is the highest in this country, but also because the state had seen the wisdom of concentrating all her efforts on one teaching institution, namely, that belonging to the people and supported by the state. A majority of the speakers found occasion to congratulate Minnesota upon present conditions and future prospects.

F. F. WESBROOK, M. D.

NEWS ITEMS

Dr. P. F. Roberts, of Illinois, has located at Hamilton, N. D.

Dr. E. C. Dollard, of Sheboygan, Wis., will locate in Delano.

Drs. Albert and Josephine Tofty have moved from Ruthton to Lindstrom.

Drs. Watson and Hauge, of Clarkfield, have dissolved partnership.

Dr. John A. Healy has returned to Wheaton, to resume practice at that place.

Dr. A. A. Whittemore, of White Earth, N. D., has moved to Rugby, in the same state.

Dr. Arne Nelson, the oldest physician in Polk county, died at Fertile several days ago.

The contract for the annex to St. Mary's Hospital, Rochester, has been let to a local firm.

Dr. J. K. Moen, of Windom, will take an extended course in post-graduate work in Europe.

Dr. W. B. Mowatt, of Walhalla, N. D., has returned from Chicago, where he has been doing post-graduate work.

Dr. E. M. McLaughlin, of Winona, was married last month to Miss Mina K. Fortune, of Huntington, Canada.

The Swedish Hospital of Minneapolis recently celebrated its tenth anniversary by the issuance of an attractive booklet.

The Minnesota Academy of Medicine will hold no meeting in June because of the date of the meeting of the A. M. A.

Dr. A. H. Keller, of Sioux Falls, S. D., has been East doing post-graduate work in the nose, throat, and lung diseases.

Dr. George I. Kelway, of St. Paul, has gone to Owego, N. Y., to accept the superintendency of the Glenmary Sanitarium temporarily.

Dr. A. P. Maschgar, of St. Mary's Hospital, Rochester, has formed a partnership with Dr. George A. Binder, of St. Paul.

Minot, N. D., wants the \$80,000 hospital which the Methodists of North Dakota will build in the city offering the best inducements.

Dr. W. B. Foster, a recent graduate of Rush, has located at Bismarck, N. D., and will be associated with Drs. Quain & Ramstad.

On account of the meeting of the A. M. A., the June meeting of the Hennepin County Society will be postponed until June 15th.

The local chapter of Nu Sigma Nu held its annual banquet last month at the Minnesota club, St. Paul. Dr. Erdmann acted as toastmaster.

The Minnesota Graduate Nurses' Association held its fourth semi-annual meeting in Minneapolis last month, with an attendance of over 100.

Dr. F. J. Mitchell, of Euclid, has gone to New York, where he will be on the staff of a large hospital for a year. Upon his return he may locate in Grand Forks, N. D.

Miss Emma M. Durkee, a graduate nurse, has taken up the practice of "hourly nursing" at Man-kato; the basis of charges is 50 cents an hour. This plan of nursing should prove a great benefit in any city.

There seems to be a well-authenticated death from the effects of a John Till plaster in the case of J. P. Palmer, the proprietor of a hotel at Fairfax. The cause of death was clearly blood-poisoning.

PHYSICIANS LICENSED AT THE APRIL, 1908, EXAMINATION TO PRACTICE IN MINNESOTA

UPON EXAMINATION

Aune, Martin, Hamline, 1907.

Barringer, Paul E., Hamline, 1907.

Current, E. H., U. of Minn., 1907.

- Ely, Orriman Stewart, U. of Minn., 1906.
 Estrem, Carl O., U. of Minn., 1907.
 Fortney, Gerhard O., Rush, 1906.
 Foster, Wm. B., U. of Minn., 1907.
 Holman, Edward E., Hahnemann, Chicago, 1878.
 Johnson, Aug. Eloy, Hamline, 1906.
 McBane, Dugald, Provincial U., Toronto, 1902.
 Macbeth, Jesse L., Fort Wayne Med. Col., Indiana, 1905.
 Rand, Maritt John, U. of Minn., 1907.
 Schlopp, Otto Wendell, Baltimore Med. Col., 1907.
 Shannon, Sylvester Silburne, Queen's University, 1906.
 Smith, Baxter Allen, Queen's University, 1905.

BY RECIPROCITY

- Atwater, Mira Belle Herrick, Homeo. Med. Col., Cleveland, 1906.
 Bachman, Morris Piper, U. of Iowa, 1900.
 Briggs, Francis Wm., U. of Iowa, 1905.
 Bursheim, Peder J., Keokuk, 1905.
 Christensen, Edward P., Rush, 1906.
 David, Wilbur Fisk, Hahnemann, Chicago, 1881.
 Dollard, Edmund Chas., Jefferson Med. Col., 1899.
 Dunham, Henry Edward, Hahnemann, Chicago, 1899.
 Ekblad, John Wm., Kansas Med. Col., 1900.
 Harris, Geo. Wash., Rush, 1886.
 Hobart, Agnes Jane, U. of Iowa, 1907.
 Lothrop, Chas. Arthur, Hahnemann, Chicago, 1902.
 MacLaughlin, Harry Earl, Sioux City Col. of Med., 1904.
 Melzer, Geo. Robt., Northwestern, 1903.
 Morse, John Hinckley, Harvard U., 1901.
 Okerstrom, Albert, U. of Illinois, 1905.
 Pope, Geo. Frederick, P. & S., N. Y., 1892.
 Potter, Albert Clinton, Detroit Col. of Med., 1906.
 Ranney, Thos. Pollock, Northwestern, 1905.
 Solsem, Fredk. N. S., Bennett Med. Col., 1906.

PARTNER WANTED

A man who will be satisfied with honest work and a fair income, Norwegian preferred. Address G. M., care of this office.

FOR SALE

An unopposed practice in a town of 400 people; good office-fittings, team, buggy, harness, sleigh, and all equipments at a bargain. For particulars address S. B., care of this office.

The Rockefeller Institute has recently supplied the State Board of Health with some anti-serum for use in cases of cerebrospinal meningitis due to the diplococcus intracellularis. It is desired by Dr. Flexner that the serum should be looked on as merely in the experimental stage, and on this account he is especially anxious that in all cases where it is employed very careful records shall be made, including "the influence of the antiserum upon the number, appearance, growing properties, etc., of the diplococcus, upon the relation of the diplococcus to phagcytosis, and on the number and appearance of the leucocytes before and after the antiserum injections."

The antiserum may be obtained by application to the Laboratory of the State Board of Health, but, on account of the very limited supply, it can be given out only in cases where the points mentioned by Dr. Flexner will be carefully studied.

FOR SALE

A decided bargain in a second-hand x-ray outfit. Owing to a partnership we have two x-ray outfits and will sell one at a bargain. Outfit includes a Tesla high-frequency coil (for incandescent or alternating current), fluoroscope, and tube-stand. Price only \$25.00 if taken at once. First cost \$125.00. Address M. W., care of this office.

FOR SALE

In Southern Minnesota, a practice worth \$2,500 a year. Well settled community of Germans and Americans. Collections excellent; living expenses low. Office furniture, team, etc., worth asking price of practice. Terms: \$900 cash, \$300 secured notes. A good man cannot fail to be satisfied with the field. Address W. C., care of this office.

PRACTICE FOR SALE

In a village of 500 inhabitants in the west central part of Minnesota, thickly settled, rich farming country surrounding; no other doctor in town; a good drug-store in town. The reason for leaving is that I want to move to the city and go into partnership with my brother. For further particulars address M. C., care of this office.

PHYSICIANS' ATTENTION.—Drug-stores on easy payments, etc. Drug-store positions, United States or Canada. F. V. Kniest, Omaha, Nebr.

THE JOURNAL OF THE MINNESOTA STATE MEDICAL ASSOCIATION AND THE NORTHWESTERN LANCET

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JUNE 1, 1908

No. 11

SYMPOSIUM ON EXOPHTHALMIC GOITRE*

PATHOLOGY OF EXOPHTHALMIC GOITRE

BY ARTHUR SWEENEY, M. D.

ST. PAUL

Exophthalmic goitre is characterized by a triad of symptoms of definite character; enlarged thyroid, rapid heart, and prominent eyeballs. Any one of these symptoms may be absent, but the association of these symptoms is always present in the disease at some stage.

It was first described by Flajani, in Italy, in 1802. Parry, in England, wrote of it in 1825. Graves recognized it in 1835, and Basedow wrote of it in 1840. Following a detestable custom, the disease is frequently spoken of as Graves' or Basedow's disease.

It is a condition most frequently found in the active, reproductive period of life, being quite rare under fifteen years, and after the menopause. It is four times as frequent in women as in men, and appears to be associated frequently with menstruation, the gland often becoming somewhat larger at that time. In the period of pubescence in girls there is often a temporary enlargement of the gland, which, later, disappears.

The onset of the disease is more often ascribed to mental and emotional shock and strain than to any other condition. As an underlying factor neuropathic temperament seems to be essential. Most of the cases being marked by functional

nervous disturbances, it is fair to assume that the conditions which produce the disease act by preference upon nervous systems that are unstable. It is uncertain whether mental and emotional strain is any more than an exciting cause, it being probable that the disease is present previous to the nervous shock to which it is ascribed. Pregnancy seems to influence the onset of the disease. When it occurs during the course of the sickness, it seems to ameliorate and, in other cases, to aggravate it.

As to the pathogenesis of the disease nothing is definitely known. After much investigation and discussion two theories remain as representing the best thought upon the subject: first, that it is due to physical alteration in the gland and its secretions; and, second, that the disease is a neurosis, whatever that indefinite term may be conceived to cover. It is true that in myxedema, where symptoms the reverse of those present in exophthalmic goitre are manifested, there is a physical alteration of the gland with a diminished secretion; and in the disease under discussion there is an increase in the size of the gland and an increase or perversion of its secretions. Mere increase of the size of the gland, however, is not followed by symptoms of exophthalmic goitre unless that increase be of the parenchymatous variety, and accompanied by perversion of its secretions. The character of the thyroid product seems to be the special factor that develops the symptoms of the disease. Whether the symptoms are due merely to increase of quantity or perversion of quality of the secretion, has not yet been definitely determined.

*Read before the Minnesota State Medical Association, August 13 and 14, 1907.

It is still to be determined whether this increase or perversion of secretion is not, after all, due to nervous influences rather than to physical changes in the gland. There is much to support the neurotic theory of causation. A neurotic temperament seems to be a basal condition. As evidence of bulbar disease as a factor in its production, is the peculiar association of rapid heart-action, tremor, vasomotor changes, and disturbances of temperature, together with many other purely functional symptoms. In some cases disease of the restiform bodies or hemorrhage of the medulla have been found, but whether these conditions are not secondary rather than primary changes is not known. Experimental lesions of the restiform bodies by Felehne and Dardufi have been followed by the major symptoms of exophthalmic goitre. The association of the disease with emotional states, such as fright, anxiety, worry, and other depressive states, certainly merits attention in this connection.

Horsley and many others cling to the theory of physical alteration of the gland as a cause of the condition, and there is much ground upon which to establish this belief. The fact that removal of a part of the gland often abates the symptoms would seem to be conclusive evidence were it not for the fact that it does not give light upon the conditions that originally produced the disease. In some cases the administration of thyroid extract to normal persons will produce the major symptoms of exophthalmic goitre, but this of itself proves nothing more than that the symptoms may be due to an excessive amount of thyroid secretion. It is also true that in certain cases of the disease administration of thyroid extract ameliorates the condition.

To conclude: we can say of the pathogenesis of exophthalmic goitre that there is absolutely nothing definitely known, and that under these circumstances one theory is as good as another.

The pathology of the disease is therefore an unimportant subject for us to consider at this time. The gland may present any change from simple congestion to the most destructive lesions. Usually the lobes are unequally enlarged, firm, and of a red, pulpy character. Colloid degeneration occurs, and cysts may be present. Connective-tissue increase may be extreme, and the acini become dilated. The colloid material largely disappears, and the secretion becomes thin and watery. Other changes outside of the gland are usually secondary and are not of interest in this connection.

The symptoms of exophthalmic goitre group

themselves about the three cardinal signs, rapid heart, thyroid enlargement, and protrusion of the eyeballs, and are mainly vascular and nervous in character. The most prominent of the symptoms are those which refer to the heart. The pulse is seldom under 90, usually 120, and frequently 150 or more. The radial pulse may be weak when the heart-action is violent and tumultuous. Rapidity of the heart is a constant condition. All other signs may be very slightly noticeable, but rapid heart-action is essential to the diagnosis of the condition. The heart-beat is usually regular, but often there is a greatly disturbed rhythm with irregularity in force of the contraction tumultuous in character to which the name *delirium cordis* has been given. Palpitation and throbbing are present on the slightest excitement or exertion. These attacks are usually accompanied by more or less distress, rapidity of respiration, hot flushes, and suffusion of the neck and face. Functional systolic bruits and anemic murmurs are very frequent. Organic valvular disease is, however, a rare and accidental complication. The heart is dilated rather than hypertrophied. The general arterial system is affected, the pulsation of aortic branches, the cervical, temporal, and retinal arteries being visible. Pulsation in the arteries of the extremities is more rarely seen.

The goitre may appear before the onset of other symptoms, or may be delayed until they are well advanced. It is usually insidious, and tightness of the neck-band commonly first directs attention to the condition. Sometimes it appears with relative suddenness, and may increase and decrease in size at short intervals. It rarely attains any considerable size and seldom interferes with respiration. The right lobe is usually larger than the left, and the gland is almost never symmetrically enlarged. Occasionally the isthmus is alone involved. The tumor may be soft or may offer considerable resistance to touch, and a pulsatile thrill is frequently observed. Auscultation over the gland discloses a bruit synchronous with the pulse. This should not be confounded with the venous hum of the vessels of the neck. The tumor, by manual compression, can be made to reduce in size considerably, but the volume returns quickly. During the progress of the disease the size of the tumor varies considerably, at times being quite large, and at others much smaller. It may, in the later period of the disease, become quite hard, sclerotic changes having taken place.

Exophthalmos is usually the last of the three

cardinal symptoms to appear. The eyes appear to be quite prominent, bulging considerably from the orbits and showing frequently a retraction of the lids, which allows the white sclera to be seen at all points about the cornea. One eye may be more prominent than the other, not always, however, corresponding with thyroid enlargement on the same side. In extreme cases the eyeball has been completely dislocated. The cornea is subject to inflammation, due to insufficient protection by the lids. In marked cases a bruit may be heard by placing a stethoscope over the closed lids. The lids are retracted. Winking is infrequent. Incomplete closure of the lids, especially in sleep, is noticed. The lid sluggishly follows the eye in its downward movement, showing the white sclera above the cornea (von Graefe's sign). Stellwag's sign is present in marked cases, showing widening of the pupil and incomplete closure of the eyes. Difficulty of convergence of the eyes is a frequent sign. Vision is usually intact, but myopia may develop from extreme exophthalmos. The fundus shows few changes aside from congestion and pulsation of the retinal vessels.

The general muscular system undergoes changes in the nature of general weakness, which comes on early, the knees failing to support the body well, and leading to a general uncertainty of gait, with occasional falls. The reflexes may be diminished. Respiration is shallowed and rapid, and the chest is not well expanded. Twitching of muscles, cramps, and choreiform contractions are occasionally seen. Tremor is an almost constant sign. It is seen most frequently in the hands, of variable intensity, but almost always fine and rapid. Frequently it involves the head and shoulders. Placing the hand on the shoulders detects a general fine tremor of the trunk and upper portions of the body. This tremor is often not appreciated by the patient, and at other times is quite distressing.

The temperature is frequently somewhat elevated, although usually there is no variation from normal. In rare cases the temperature may be raised from two to five degrees, and toward the end of fatal cases there is commonly a considerable hyperpyrexia. Aside from the actual disturbance of bodily warmth the patients often complain of a feeling of unbearable heat, so that bedclothing, even in cool weather, is discarded. Profuse sweating is sometimes a distressing symptom, being limited occasionally to one side of the body. Hemorrhages from the mucous membranes occasionally occur. Periodical poly-

uria is a frequent complaint, and albuminuria is often met with during the course of the disease. Edema, which does not pit on pressure, is often seen, especially about the eyelids and the outer sides of the legs and thighs.

There are usually a large number of mental symptoms present during the course of the disease, varying in intensity from simple excitability to the graver forms of insanity. Together with a seeming lack of power to appreciate the seriousness of the sickness, there is a general restlessness and agitation, a change in temperament in which the emotions are more than usually excited. They become irascible, fault-finding, and critical, with lack of composure or power to reason with logical precision. Insomnia is relieved by sleep filled with horrible dreams, and they awake unrefreshed to days in which hallucinations and delusions disturb them. Sometimes there is a condition of mania, and, more rarely, there are depressive conditions.

The skin is subject to many changes. Vitiligo and bronzing of the skin frequently occur, and spots of dirty-brown discoloration appear on the face, arms, and trunk. The skin is often moist through excessive perspiration, at times becomes thickened, and the hair falls out. Irritable cough is a distressing symptom, but all lung changes are usually secondary to the heart conditions. When dyspepsia is present it is usually due to the pressure of the enlarged gland.

Digestive conditions are common. Although loss of appetite or excessive appetite and vomiting are occasionally present, the most important digestive symptom is diarrhea. There are frequent painless stools, made up of thin mucus and undigested food. They are apparently not controlled by ordinary means, and are not due to the ordinary causes, but seem to depend on irritation of some chemical substance secreted by the gland. The frequent movements of the bowels rapidly reduce the strength of the patient, and lead to a fatal termination. Loss of weight occurs independently of digestion disturbance. The loss is not steady, a deficiency of ten or fifteen pounds being regained slowly, to be again lost without apparent reason.

The diagnosis of exophthalmic goitre is easy. The three cardinal symptoms, or any one of them with the association of nervous, muscular, digestive, or vascular symptoms, form a picture which is not misleading.

Neurasthenia and phthisis alone simulate the disease, but the distinction is easily made.

(For discussion, see page 225)

GENERAL NERVOUS MANIFESTATIONS
IN EXOPHTHALMIC GOITRE

BY W. A. JONES, M. D.

MINNEAPOLIS

During the past few years the study of the ductless glands has progressed with increasing activity and interest. The tendency of the present day is to demonstrate the relationship between many internal and nervous disorders to an error in function of some part of the glandular system.

Scientists and investigators are still striving to establish a reasonable foundation, be it chemical, bacteriological, or pathological, to explain the occurrence of disease-states and to pave the way for the creation of a remedy based upon such research.

Brown-Sequard announced, many years ago, that every ductless gland or similar organ produced a secretion or substance necessary for our well being. This pioneer physiologist and neurologist was the first scientist to really stimulate others to search this rich field for the explanation of many disorders that were practically unexplored.

Sajous has recently investigated the subject with elaborate thoroughness, based upon thousands of experiments performed by himself and others, and now believes he has found a direct line of association and function between the pituitary body and the adrenals through the sympathetic nervous system. He further believes this knowledge and the line of therapy which it implies, will ultimately revolutionize our ideas of many forms of disease, and will clarify and simplify our methods of treatment.

Beebe and Rogers have made experimental inroads into the field of the thyroid and the thymus, and have made use of various products, both fresh and dry, to demonstrate and substantiate the functions of these glands. Dr. C. H. Mayo has operated on more than two hundred cases of exophthalmic goitre and has satisfactorily proven that the disease is due to an overproduction and an overloading of the blood-stream through the thyroid secretion. He has shown also that the parathyroid is not involved in the production of Graves' disease; on the contrary, a surgical removal or a surgical injury of this gland produces only tetany. It is true that no constant lesion has been found in the nervous system in exophthalmic goitre, the primary lesion is always in the thyroid gland, nevertheless symp-

toms of nervous origin are very commonly present in disturbances in function of this as well as of all the ductless glands.

Thyroidectomy, surgically or experimentally performed, has produced or been followed by fibrillary tremors, tetany, spasm, or clonic rigidity. This condition, Dr. Mayo believes, is due to injury or removal of the parathyroid. Other nervous symptoms, like paresthesias, anesthetics, toxemic neuroses, epileptic and hemiplegic attacks, have also been noted. The same conditions and symptoms are not infrequently seen in cases of exophthalmic goitre, varying in degree of severity, form, and combinations, according to the individual, his inherent tendencies, and the causes which have overwhelmed him.

It is safe to assume that a disease of the thyroid area is always primary in the production of the group of symptoms now known as exophthalmic goitre, or Graves' disease, but what the primary origin of exophthalmic goitre is, or whether other ductless glands are involved in the process, is still a debatable question.

It is also safe to assume that whatever has created the disorder in the functionary power of the gland, the nervous system is sure to be involved from an over-intoxication of the blood by an excess of thyroid secretion, which acts as a poison in the blood-stream.

When we consider the widespread control the sympathetic nervous system exercises over the circulatory and general glandular apparatus it is not difficult to believe that this portion of the nervous system should be the primary point of attack in the general upheaval in which nutritional and nervous symptoms are conspicuous in their prominence. The almost inevitable result is a loss of control over the circulation and a general state of nervous irritability, varying in degree and form according to the embryological tendencies of the individual in his glandular and sympathetic apparatus, and his inherent power of resistance and repair. The time element alone can determine the value and outcome of his symptoms.

The most frequently associated symptoms in a typical case of exophthalmic goitre are tachycardia, muscular tremor, general nervous instability or unrest, enlargement of the thyroid gland, protrusion of the eyeballs, and diarrhea. The tachycardia is usually present. The increased activity of the heart is shown by a pulse which varies in rapidity from 100 to 180 beats per minute, a dilated pulse which is influenced by slight efforts, such as turning in bed, or moving an extremity, or which responds to emotional states

that ordinarily would make no impression. The simple answer to a question or the recognition of a friend may increase the heart-beat 30 or 40 pulsations a minute. The tachycardia and its accompanying palpitation not infrequently give rise to a sense of fullness or a violent throbbing in the precordium, and over the abdominal aorta. The vessels, peripheral and deep, are distended, and the skin of the face, neck, and trunk is suffused. The patient suffers great weariness and exhaustion, and dyspnea and dysphagia are often extremely terrifying.

The tremor in exophthalmos is usually fine in character. The extended hands will show the nervous instability by a small rhythmical movement, which continues during exertion, and which may increase and become coarse in type and extend to the neck, trunk, and lower extremities. This state of tremor is related to the occasional twitching of voluntary muscles that comes on during sleep, or the sudden and jerky relaxation of the muscles of the hands, arms, or legs when objects are dropped or the patient falls to the ground from apparent exhaustion.

The general nervous symptoms indicating a widespread involvement of the nervous system are mainly those of irritability. This covers the mental as well as the nervous field.

The temper of the individual is more or less disturbed, and he is impatient, apprehensive, and full of fears.

The deep reflexes are increased and variable, and the eyes are intolerant to light, due in part to the protrusion of the globe and in part to the irritability of the retina and its associated fibres. Sounds of all kind are intensified, annoying, and distressing.

Vertigo is not uncommon and is usually present when tachycardia is most evident. Protrusion of the eyeballs varies in many individuals. It may be inconspicuous or absent entirely, but most frequently it is a noticeable symptom.

The thyroid gland is enlarged, but the size is not constant and not infrequently can be determined only by careful, deep palpation or by surgical exploration, when it is found flattened or low in the thyroid region. When plainly palpable the pulsations are synchronous with the pulse-beat.

Digestive disorders, vomiting, diarrhea, and intestinal movements are common, and are due to the loss of control of the sympathetic system through the abdominal plexus.

The three general groups of symptoms are most important and are usually demonstrable,

viz.: tachycardia, tremor, and instability. They vary, however, in degrees of intensity. In many cases the combination is broken, and one or another of the triad may be absent, and in its place are symptoms of greater or lesser significance. The groups, if present, are diagnostic of Graves' disease, even though the heart-beat does not reach 100 beats per minute. These cases, classed under the head abortive, are sufficiently numerous to entitle them to careful consideration and study. The exhaustion, the skin phenomena, and the apparently insignificant tremor, without marked tachycardia, exophthalmos, or thyroid enlargement are frequently unrecognized as a diagnostic group, and are erroneously called neurasthenias.

When the exophthalmos is extreme there is not infrequently ophthalmoplegia added to the symptom-group.

In many cases, and here again the type of individual must be placed in the proper class, the physical group is more or less submerged by the pressure of psychical symptoms: disorders of sleep, dream-states, difficulty in concentrating the attention, lapses of memory, and temporary confusion. In the more extreme cases the patient is depressed or excited, and occasional mild or spurious forms of insanity mask the real disorder.

Hallucinations of sight and hearing and occasional suicidal or homicidal tendencies are present.

In spite of all of these possibilities the cardinal symptoms are to be found if the investigator is searching and painstaking in his efforts to bring out the early history and its attendant group of symptoms, however varied in degree or kind.

(For discussion, see page 225)

GENERAL THERAPEUTICS OF EXOPHTHALMIC GOITRE

By HALDOR SNEVE, M. D.

ST. PAUL

The treatment of any disease must needs depend upon some theory, except in those rare conditions where we have specifics. The surgical treatment of exophthalmic goitre, for instance, is practiced upon the theory that the disease is caused by excessive function of the thyroid gland. Dr. William Thomson, of New York, administers calomel and intestinal antiseptics, and leaves out red meat, upon the theory that the disease is

produced by an intoxication from the intestines. Jonnesco has removed the cervical sympathetic ganglia, upon the theory of disease in the sympathetic system causing Graves' disease. The hyperthyroidization theory led Kocher, the eminent Swiss surgeon, first to practice ligature of the arteries of the thyroid gland, and, later, to partial ablation. Rogers and Beebe, of New York, acting upon the same theory, have prepared a serum from the thyroid gland; and Mobius furnished milk from thyroidectomized goats upon the same belief. Kocher's operation gives a certain percentage of improvements; and Jonnesco's statistics of sympathectomy are just about as good. The sera from the thyroid and the milk from thyroidectomized goats have been used up to this time just about enough to disappoint our hopes, so that we are left to-day with the choice between the partial removal of the gland, and a general symptomatic treatment.

Let us look briefly at the hyperthyroidization theory: Mobius struck by the contrast in a patient suffering from athyroidism and one suffering from Graves' disease, propounded the theory that in the last trouble the thyroid is furnishing too much secretion, which poisons the body, producing the symptoms of this affection. Upon this slender foundation many serious operations have been undertaken, and are being performed to-day. Pathologists have attempted to show us changes in the thyroid, and it cannot be denied that in many, if not in most, of the cases of Graves' disease there is an increase of functioning gland-cells, apparently; but let it be remembered that this is not in reality a pathological transformation, but is, rather, a physiological change; in reality only an increase in the functioning cells; and, furthermore, that many cases of Graves' disease are not accompanied by any discoverable increase in the thyroid gland. I pointed out in a paper, published in the St. Paul Medical Journal, October, 1906, that no matter what our theory of the causation may be, the *disease does find expression through a disorder of the vasomotor system*, and since the paralysis of the vessels in the thyroid most surely would lead to enlargement of the same, just as the vessels in the orbit push out the eye, it is difficult for me to believe without further proof that the enlargement of the thyroid is not a particular physiologic result of the vasomotor condition. In spite of the skill of a few surgeons, thyroidectomy is an operation not to be lightly undertaken.

The use of the x-ray with exposure of the gland at a distance of fifteen to sixteen inches

from the tube for from three to ten minutes at intervals of from two or three days to two weeks, has been praised by a number of physicians. Its use in two of my cases seems to have diminished the size of the gland, but has apparently had no effect on the other symptoms.

Phosphate of soda, extolled by Kocher, I have faithfully tried in fifteen cases without any good result which I could ascribe to the drug.

From Omaha we have received reports of several cases apparently benefited by injections of diphtheria antitoxin. I have tried it in only one case, and with no improvement.

Thomson's Keffir milk and blue-mass treatment have not given results in my hands.

Four of my cases have been given the sulphocyanate of soda for its action on colloids because of the good reports from Vienna and Munich, but without visible results.

Upon the supposition that we are yet entirely ignorant of the causation of Graves' disease, but that we do know that the disease finds its expression through a disorder of the vasomotor system, I wish to invite your attention to the medical management of these cases. The profound erethism of the nervous system, the rapid heart-action, etc., suggests, first of all, rest in bed, and with this I strongly advise rest to the mind, by which I mean psychic treatment,—hopeful suggestions, the attempt to produce in the patient's mind a conviction of cure. Galvanization of the gland and sympathetic ganglia in the neck with one electrode covering the whole gland in front and one in the back of the neck, using from three to five milleamperes for from three to five minutes daily is of decided benefit. Since we have few, if any, drugs which are of much value in vasomotor disturbances I have given them up entirely, and wish strongly to warn against the use of digitalis and other heart stimulants, as well as the use of drugs to limit the watery discharges from the bowels. The employment of bromides and other sedatives is worse than useless, and results only in disorder of the stomach, a fetid breath, and pimples. As far as drugs are concerned, we are limited to the use of tonics, the best of which, in my experience with over 30 cases, is the syr. ferri iod. and cod-liver oil. Lastly, we have only one other remedy which has a direct action on the vasomotor system, and that is the employment of cold stimulation by hydratic procedures, the object being to train up gradually a proper tone in the vasomotor mechanism. I begin with a cold sponge-bath while the body is still warm from

bed in the morning, the patient standing in about three inches of warm water, or by giving the patient, while in bed, if too weak to go to the bathroom, a spinal douche by means of a small water-sprinkler, beginning with only a one-half minute performance. When the patient is very weak, and very excitable I begin with water of about 85 degrees Fahrenheit, progressively and gradually reducing the temperature to 65 degrees or 70 degrees, as the patient progresses and reacts. In the vast majority of cases the plan just outlined will result in clinical recoveries, but the treatment must be persisted in faithfully, as it is a question of years, and not weeks.

(For discussion, see page 225)

THE SURGICAL TREATMENT OF HYPERTHYROIDISM, BASED UPON

200 OPERATIONS

By C. H. MAYO, A.M., M.D.

ROCHESTER, MINNESOTA

In this age of surgical progress it is, at times, difficult to prevent over-enthusiasm from warping our judgment with reference to the treatment of various diseases. In no type of disease is this more likely to be true than in the surgical treatment of hyperthyroidism, because of the almost marvelous results obtained. The immediate results are to be contrasted with former methods.

We employ the term *hyperthyroidism*, because it expresses the true conditions far better than the terms commonly used, viz.: Graves' disease, Basedow's disease, Parry's disease, or exophthalmic goitre.

To those of us who have been on the firing-line, so to speak, of the surgical side of this subject, it is extremely gratifying, finally, to see the disease placed upon a scientific basis of cause and effect.

For many years the varieties of treatment, or the remedies used for Graves' disease, were only exceeded in number by the numbers in use as cures for *tic douloureux*. These methods were rarely based upon other than empirical statements, to the effect that they seemed good for, or that they improved, an individual case or two.

The more recent attempts at relief by serum therapy appear to be based upon good reasoning, and, when properly employed, it has given satisfactory results in selected cases.

The operative treatment of goitres in general, has been placed under a ban in the past. It was considered an operation to be undertaken only under dire necessity, and, naturally, a last-resort operation was accompanied by a high mortality. The main points impressed upon students were the reasons for not operating, and the patients were informed that some hideous skin disease might follow, or of the certainty that they would become "foolish" should the goitre be removed and they survive the operation.

Under these circumstances surgical treatment was advised only for patients who were exhausted by their disease or by the treatment they had received; and thus surgical aid was given only to those cases that persisted in failing in spite of all methods of treatment. Very often, moribund cases were operated upon as a *dernier ressort*, and, as is usual in the progress of medicine, failures of this kind result either in abandonment or development of methods, improvements in diagnosis, choice of and preparation of patients, until to-day we have presented to us in a large series of cases the wonderfully low mortality of three or four per cent, with practically all cases relieved and most of them cured.

The statistics of the Kochers, who have long led the world in goitre surgery, show some 250 cases of hyperthyroidism surgically treated. Other operators present a large number of cases, though smaller than the Kochers; and in considering these statistics I say again, that it is extremely gratifying to know that we have accepted the fact that there is a similar change in the thyroid, either in a part or in the whole of the gland, in hyperthyroidism.

Practically, it is a "work" hypertrophy and cannot be distinguished from such conditions when experimentally produced.

Some are manifest cases of hyperthyroidism merely upon observation: others have the ocular changes most prominent. Again, we have no eye symptoms, but a goitre pressure, while some well-marked cases of the disease have no eye symptoms and no enlargement of the thyroid manifest to palpation, yet the thyroid is enlarged and has the cell changes common to the gland in this disease.

We consider three types of the disease, two regular and one pseudo:

First, the soft, vascular, pulsating thyroid, with symptoms of hyperthyroidism, or the hard, dry gland of hyperthyroidism, the usual type.

Second, the development of hyperthyroidism in those with pre-existing goitre in whom we find

changes of solid tissue, loss of colloid, and vesicles filled with columnar and cuboidal cells in scattered areas, instead of a general change in the gland, as in the first type.

Third, pseudo-exophthalmic goitre, in which we have those who, by reason of the growth of a tumor, such as an encapsulated adenoma in the gland, suffer from excessive absorption of their own thyroid, which occurs at irregular intervals. Such cases may suffer from all the ordinary changes of hyperthyroidism for short periods, but they seldom develop exophthalmos. The last-named variety is often overlooked in securing histories of individuals with encapsulated goitres.

Inasmuch as many cases of hyperthyroidism recover without treatment, and others in spite of treatment, it is perfectly justifiable for physicians to institute treatment on any line, plan, or system which they believe proper. The mistake in the past has been to persist in the belief that some particular drug or treatment would eventually be successful in spite of the downward progress of the patient, thus withholding surgical aid until, of necessity, the surgical mortality represents also in part what should properly be medical. On the other hand, the surgeon should not accept cases for operation until all the conditions are as favorable as possible for the recovery of the patient.

One of the great dangers of the operation is from myocardial change, usually shown by uneven tension and irregularity in the pulse. No patient should be operated upon whose pulse cannot be counted continuously because of uneven tension. Gastric crises of diarrhea should also lead to postponement of operation. Ascites and edema of the feet and hands, are contra-indications. All of the foregoing contra-indications, usually with suitable treatment, may be overcome. The Kochers, in these cases, ligate one or more vessels of supply (under cocaine) according to the case, reserving extirpation of the gland for a later period.

We have used belladonna extract with quinine internally, and in certain cases the x-ray is applied over the gland. This treatment is given until the general condition improves and the operation is considered safe. The improvement under the Roentgen ray may be most marked for a time, but is seldom a lasting one.

The anesthetic of choice is ether. Very rarely indeed do we find it necessary to use cocaine. The etherization is preceded, twenty or thirty minutes, by a hypodermic of 1-6 grain of morphia to allay the nervous restlessness and lessen

the necessity for profound anesthesia. With the morphia is given 1-120 of a grain of atropin to relieve the tracheal mucus, which may come from ether, as well as the tracheal trauma, which also stimulates the respiration.

The patient is placed in the reverse Trendelenberg posture, which tends, by gravity, to relieve the upper portion of the body of blood. The incision is the transverse collar, and includes the skin and platysma myoides muscle. The dissection of these structures held together is carried down to the sternum and up to the top of the thyroid cartilage. The sternohyoid and thyroid muscles are separated in the midline to expose the gland. This separation may be sufficient in small tumors to permit the delivery of the gland, but often it will be necessary to cut across the group on the side removed to secure a safe working field. They are incised near the upper insertion so as to avoid injury to their nerve supply, and resutured at the close of the operation. This also breaks the continuous penetrating scar. The posterior capsule of the gland is brushed back with gauze as the gland is elevated. The superior thyroid artery is ligated at the apex of the gland. At times the inferior artery may be ligated further out, if seen in the dissection.

Preservation of the posterior capsule tends to prevent injury to the parathyroids, which rest behind the intimate capsule of the glands, and the injury or removal of which, we now know, may cause tetany. This also preserves the recurrent laryngeal nerve. In several hundred operations for goitre we have seen but one very mild case of tetany of a temporary nature following this method of procedure.

Great care must be exercised in ligating the superior thyroid, as a considerable proportion of the deaths following an apparently successful operation, are from hemorrhage. This hemorrhage is usually due to the including of some fibres of the omohyoid muscle in the ligature which may be dislodged with movements of the neck.

The isthmus is ligated, and the wound area burned with carbolic acid and alcohol neutralization or washed with Harrington's No. 9 solution. Following this free drainage is instituted through a separate incision.

HARRINGTON'S SOLUTION

Alcohol	640 parts
Water	300
Hydrochloric acid	60
Bichloride	0.8

This solution serves to autowash the wound

area with serum and inhibit lymphatic absorption. The patients are given large saline enemata under slight pressure. If not retained, they are given saline subcutaneously. This is repeated several times within the first thirty-six hours. Should excessive sweating occur, atropin is administered. Morphia is given to diminish excessive restlessness. If there is considerable serous discharge, or even if there is no discharge, hot boric-acid dressings are applied over the front of the neck. The drains are left from two to four days, according to their apparent utility. The deaths that occur will usually be within twenty hours.

The general nervous restlessness and tremor subsides to a remarkable degree within two days. The pulse may remain from 120 to 170 for two days, but drops suddenly on the third day about twenty to thirty beats, and is usually 80 or 110 beats within six days. The temperature may be elevated two to three degrees for two days following operation, when it drops with the pulse.

If the exophthalmos is marked it will not entirely disappear after operation, but will be greatly improved. Many cases only partially relieved of their symptoms, are in no sense a discredit to the surgery, but merely show that not sufficient gland has been removed. These cases should be re-operated upon and more of the gland extirpated. We were greatly pleased with the result in four cases in which this was done.

After operation these patients are seldom confined to the bed more than three days, and are commonly out of the hospital within a week. Practically all cases are improved over their former condition, and most of them are cured. The mortality is constantly decreasing. There were 4 deaths in the first 16 cases, 3 in the next 30, and but 2 in the last 150 cases.

DISCUSSION OF THE PRECEDING PAPERS

Dr. F. A. DUNSMOOR (Minneapolis): Dr. Sweeney's question as to whether the nervous symptoms that are associated with exophthalmic goitre, are due to nerve lesion, pressure, or pathological change in the gland itself, is of deep interest to us all. Surgically considered, we find tachycardia, muscular weakness, and tremors, even mental disturbance, irrespective of the pathological conditions of the gland that may be demonstrated after its removal. The true pathology behind these symptoms is as elusive as that from shock, being occasionally so severe as to produce death without leaving any trace of the cause in any part of the body. But whether thyroid gland be large or small, fibrous, cystic, or malignant, regular or irregular in shape, or whether pressing upon the trachea or laryngeal nerves, the removal of the greater portion of the gland results in disappearance of the symptoms, and that very rapidly.

Dr. Sneve's suggestions as to pre-operative treatments, are important. I believe the hypertrophy of the heart, due to the development of the muscles under stimulation of thyroid influence, and the constriction of the vasomotors, is a conservative condition until the muscular power begins to fail, as it does in other forms of heart-dilatation. I certainly agree with Dr. Sneve that there is not much to be hoped for in the exhibition of drugs for the cure of this disease.

Muscular tremor is made more apparent by causing the patient to stretch out the hand as far as possible from the body and separating the fingers widely. Dr. Jones has brought out the symptoms of mental disturbances characterized by irritability, bad temper, etc. In my own experience, I have seen more of fear, diffidence, and apprehension. I am sure Dr. Mayo will agree that the hardest goitre to relieve and remove is not the largest, but, as a rule, the smallest with fibrous degeneration of the gland, and bands of fascia binding the small goitre closely around the trachea, making it scabbard-like in shape and squeezed closely against the laryngeal nerve, making operation difficult.

I am strongly in favor of the use of general anesthesia, and I have never attempted an operation for the removal of any type of goitre by means of local anesthesia. It has been my good fortune in thirty-five years of practice to escape having a fatal case. Kocher reports nine hundred consecutive cases, with the use of general anesthesia, without death. I prefer the low crescent incision, since the scar may be perfectly covered by any type of collar. From the division of the superficial muscles and the delivery of the gland, the subsequent minute steps of the operation are greatly facilitated by ligating the superior and inferior thyroid vessels. The most delicate part in my experience is avoiding the recurrent laryngeal nerve. I leave the rubber drainage for two days only.

DR. A. J. COX (Tyler): It has been my good fortune, I will say, to treat some of these cases, and they were cured by the use of medicine.

I have had some cases that were very bad, but I will mention only one or two. The worst case was a man forty years of age. He had an exhausting diarrhea, severe vomiting, and a heart-action of 140 to 160 and tremulous. I had tried various remedies to relieve this patient, but failed until I heard of thyroidectin, prepared by Parke, Davis & Co.

I had reached the limit in medicine, I thought, but determined to try this new remedy. I have no desire to advertise any company's medicine, but I am convinced that this has therapeutic value in this disease. In three cases that I have used it in I have had signal success. In the case referred to the pulse was reduced in one week by twenty beats, the diarrhea ceased, the appetite returned, and he was able to retain food. In six weeks after beginning treatment he was able to run a traction engine, and when I began treatment he was unable to raise himself in bed, sleeping with his eyes open, and the corners were ulcerated owing to the great protrusion of the eyeballs. These receded and he was in every way a different patient. This happened two years ago, and he is still well and able to perform his duties.

Another case was a woman 22 years of age. She was greatly benefited, the nervous symptoms were removed, the protrusion of the eyeballs was reduced, and the thyroid gland is a great deal smaller, and she is now bright and well.

A third case I saw in consultation, and I recently received a letter from the physician stating that his patient was greatly improved after two weeks' treatment.

I gave the thyroidectin in five-grain doses three times a day. These are all the cases that I have had in the last five years, and I am pleased to say that they were all benefited. I wish it to be understood that I gave thyroidectin, not thyroid extract. Dr. Sneve stated that thyroid extract would cure these cases as well as the thyroidectin. From my experience, I cannot agree with him in this statement.

DR. J. W. ANDREWS (Mankato): After hearing all these luminaries from Minneapolis, Rochester, and St. Paul, it is with diffidence that smaller men have anything to say. Yet I want to add this: I recently had a patient with a large exophthalmic goitre, and it puzzled me to do something to cure her. One day I happened to mention to her that in one of the medical journals I saw mention of injecting diphtheria anti-toxin. She was anxious to try it, and while telling her it was only an experiment, I consented to use it. I gave her an injection of 3,000 units every alternate day until I had repeated three times. The improvement was indeed remarkable; the size of the goitre rapidly decreased; the pulse dropped from 150 to 100 and less; the exophthalmos decreased, and I thought I had possibly found something that would cure without resorting to surgery. At this I ceased to use the injections, and while improvement was rapid and marked for four or five weeks, the patient began to return to her original condition, and it was not long before the goitre was as large and the exophthalmos as great as before the injection was given.

I am sure I have obtained very good results with the x-ray, not that I have cured any patients with it, but I have ameliorated the symptoms so decidedly that it left in my mind no doubt but that it was a valuable agent. We are often benefited by our mistakes, and we ought to be free to acknowledge them, and so I do here. I put the patient to bed and gave her such diet and other treatment as seemed best indicated in my judgment, until the pulse was reduced to about 120, and she seemed otherwise better, and then I operated upon her. While I urged her to have the operation under cocaine, she urged that an anesthetic be given. Ether was the anesthetic used. The operation was very rapidly done, with but little loss of blood from the operation, and the steps taken were as described in the paper here, but the patient promptly died, and, I am sure, from the anesthetic and nothing else. I therefore personally would hesitate very much to give a patient with exophthalmic goitre, with symptoms as marked as in this case, an anesthetic at all. If I were asked to repeat it I would decline the operation rather than give either ether or chloroform.

DR. AIME-PAUL HEINECK (Chicago): It is important that exophthalmic goitre cases be classified into primary and secondary forms. This classification, we think, is justified by etiological, pathological, and therapeutical considerations. In the primary forms of the affection there is a concurrent development of the goitre and of some of the other symptoms characteristic of this disease; in the secondary forms, the symptom-complex of this affection is grafted upon a pre-existing enlargement of the thyroid body. All varieties of goitre, irrespective of size, type, or state, from simple cysts to malignant tumors, may at any period of their existence

be associated with the symptom-complex of Basedow's or Graves' disease. In this disease, owing to the fact that its ultimate cause is still regarded as being yet a matter of speculation, theories have been advanced, and have been used and are used as foundations for appropriate lines of treatment. We have adopted as a working theory, that theory which is least in conflict with facts, the thyroid theory, because—

1. There is some structural alteration of the thyroid body in all cases of exophthalmic goitre. This applies to the secondary as well as to the primary forms of this disease. In the latter form the histo-anatomical changes are considered almost characteristic.

2. Exophthalmic goitre is the direct opposite of myxedema in symptomatology, in pathology, and in therapeutical indications. We know that total destruction of the thyroid gland, by disease or its total removal by the surgeon, invariably produces myxedema. We also know that cases of myxedema positively yield to the continual ingestion of thyroid-gland preparations or to the implantation in the organism of thyroid-gland tissue, if the latter maintains its integrity.

3. The symptom-complex of exophthalmic goitre can, to a certain degree, be determined by the ingestion of large doses of thyroid-gland substance, or of any of its various preparations. The tachycardia, the tremor, the exophthalmos, and the goitre have all been produced.

4. All medical or surgical measures which tend to decrease the functional activity or to lessen the volume of the thyroid-gland tissue present in the organism, also tend either to lessen the severity of the symptoms or to arrest them.

5. Our study of the literature and our clinical experience convince us conclusively, that recovery from the disease, in rapidity and in completeness, takes place in proportion to the extent of gland tissue removed, short of its entirety. Not much thyroid-gland tissue is necessary to supply the needs of the organism. From 30 to 60 grammes at least should be left.

6. Where, after a partial thyroidectomy, the symptoms recurred, recurrence was associated with, and seemed to be dependent upon, hypertrophic changes in the remaining portion of the gland. A secondary operation is indicated in cases of this nature.

7. The symptom-complex of this affection finds its most consistent and satisfactory explanation by considering the condition a general toxemia, the result of qualitative or quantitative changes, or both, in the secretion of the thyroid gland. The tachycardia, the mental changes, the sweating, the prostration, the increase of body temperature, the diarrhea, are all symptoms that we find in other intoxications.

Concerning the treatment of this affection, the following conclusions are established:

1. Thyroid-gland substance or any of its preparations should never be administered. Their use in this disease is irrational and is attended almost always by an aggravation of symptoms. They always increase the dangers of operative interference.

2. In the treatment of this affection, thymus-gland substance and its various preparations are useless. They are decidedly not curative agents.

3. Pathathyroid therapy is inefficacious. The parathyroids have nothing to do with the development of the disease now under consideration.

4. The medicinal treatment of exophthalmic goitre, the use of belladonna being excluded, is largely sympto-

matic; bromides for the nervousness, arsenic for the anemia, digitalis and strophanthus for the tachycardia, etc.

5. All forms of medical treatment for this affection, be they hygienic, dietetic, medicinal, organotherapeutic, or electrical in nature, are unsatisfactory, and are disappointing. Their comparative powerlessness has induced surgical endeavors to cure the disease.

6. Serum-therapy of exophthalmic goitre is as yet in an experimental stage. The results attending the use of thyroidectin are not always satisfactory. Billings, Quine, and others, have had failures attending its employment.

7. Partial thyroidectomy is the operation of choice in the treatment of exophthalmic goitre. It should be performed—

(a) In every case of secondary exophthalmic goitre. In these cases the patients will make an early recovery from the operation and from the disease.

(b) In every case of primary exophthalmic goitre—

(1) When after three months of well-conducted appropriate medical treatment, the patient's condition is either not markedly improved or is aggravated.

(2) When the goitre compresses or distorts the trachea, the esophagus, or both of these organs. Long-continued dyspnea is very liable to beget pulmonary emphysema.

(3) When the tachycardia is marked. Long-continued and excessive tachycardia is very liable to beget organic heart-changes.

(4) When exophthalmos is so marked as to prevent complete closure of the lids during sleep. Kocher and others report cases where patients lost

their eyesight through ulceration of the cornea secondary to marked exophthalmos.

(5) When the patient is losing strength.

(6) In the acute cases that seem like a sudden intoxication of the body by thyroid, even when no marked enlargement of the thyroid body can be demonstrated.

(7) Surgical treatment is justified by theory, by facts, and by results.

DR. L. B. WILSON (Rochester): A great many classical theories of exophthalmic goitre have been spoken of here to-day, but most of these we may profitably forget, since it is now fairly well demonstrated that there is a constant pathologic condition in all of the cases. In examining the specimens of 200 of these cases in Dr. Mayo's clinic, I have found practically constant lesions, and our experience is parallel to that of other observers who have made similar studies. The last speaker has given quite clearly the general character of these lesions. There is an increase of acini, swelling, and reduplication of the parenchymal cells, and, in general, all the conditions for an increased elaboration of the gland products.

But we must not forget that, for the production of symptoms of hyperthyroidism, we need not only the increased manufacture of thyroiodin, but we must have also its free access to the circulation. It seems to me that upon this one fact, namely, the variation in rate in which the already-produced and stored-up gland product is poured into the circulation, depends more the eccentricities of symptoms than anything else.

In passing, I would note that the presence of iodothyroglobulin in the circulatory system, which has hitherto been purely hypothetical, has recently been accurately shown in a series of beautiful experiments by Dr. Deed Hunt.

ANESTHESIA AND ANESTHETICS*

BY IVAR SIVERTSEN, M. D.

MINNEAPOLIS

Knowing that much has been said and written on anesthesia and anesthetics it is with reluctance I take the subject. As an excuse for speaking upon it I offer a wider personal experience with this subject than with any other in a limited practice of medicine.

Dr. Oliver Wendell Holmes gave the term *anesthesia* to that condition whereby the pangs of pain might not be felt, and he called the agent capable of doing this an *anesthetic*.

By using a local agent for this purpose, such as cocaine, injected subcutaneously or intra-neurally, we have a condition known as *local anesthesia*; but by using a drug which acts on the economy as a whole we have a *general anesthesia* or *narcosis*, and this especially is my topic

in this paper. General anesthesia was one of the three great blessings given humanity in the last century, and, I think, the greatest, if we were to ask which was the greatest. At any rate it ranks with vaccination for smallpox, asepsis, and antiseptics.

To Dr. Morton, a dentist of Boston, has been awarded the honor and credit of being the originator of general narcosis or anesthesia, and it was first used on Sept. 30, 1846. Several others claim priority, among these being Dr. C. W. Long, of Georgia, who, in 1842, is said to have removed a tumor under its use. Dr. Long is regarded by many, especially in the southern states, as the discoverer of anesthesia. Be this as it may, the discovery of ether as an anesthetic has been credited to, and honor is given the memory of, Dr. William Thomas Green Morton.

*Read before the Norwegian Medical Society of Minneapolis. May 12, 1908.

The first public use of ether for general anesthesia took place at the Massachusetts General Hospital, on October 16, 1846. Dr. Morton was given this opportunity by the surgeon in charge, Dr. John C. Warren, and great credit is due Dr. Warren for this privilege. It may be of interest to you to hear of the case, and it is taken from the records as follows:

Operation.—The removal of a vascular tumor from the left side of the neck of Gilbert Abbott, aged 20; a single man with the occupation of a painter.

The Harvard medical class was present, and also several prominent physicians and surgeons.

The exhibition of ether as an anesthetic was a complete success, so much so that Dr. Warren turned to the gentlemen present and said, "Gentlemen, this is no humbug."

This is mere history, but interesting to us, and I brought it out only because I feel it but justice to the memory of those who were such benefactors to humanity.

From this time on experiments and experimenters were numerous, and in Edinburgh, Dr. J. Y. Simpson, about one year later, proved upon himself and friends the narcotic effect of chloroform. Since this time nothing has been found which will supplant these two drugs, barring the limited use of nitrous oxide in minor surgery and dentistry, and the use of ethyl chloride, which is still in its experimental stage. Therefore, I think, we can safely say, we have only two anesthetics, ether and chloroform.

After this brief résumé pertaining to the history of general narcosis, I shall take up the practical side of the question.

Before an anesthetic is administered, I think it is well to consider the condition of your patient and the ability of your anesthetist.

In considering the patient's condition it is always advisable to make an examination of the heart, lungs, bronchial tubes, and arteries, and to determine, by repeated examinations of the urine, whether or no any kidney lesion exists.

We know that a patient with a weak, thready, and irregular heart-action would not be a fit subject for the safe administration of chloroform, if an anesthetic must be administered; and, again, we know that a patient with an acute nephritis, or with even a chronic inflammation of the kidneys, will not tolerate the irritating vapors of ether in its necessary quantity. Then, again, the hard, sclerotic arteries of the old, and the ease with which their bronchial tubes are affected, demand for them a careful considera-

tion in the choice of an anesthetic, lest you cause them during the excited stage to rupture one or more of their sclerosed arteries or develop a bronchitis, which may readily go on to a pneumonia, from which we always shrink. I think, therefore, in the aged I would recommend the use of chloroform, except when a cardiac lesion exists, be it functional or organic, in which case, I believe, because of the less depressant effect and, in fact, the stimulating effect of ether narcosis, ether is to be recommended. In children ether is always the safer anesthetic, as I can recall numerous instances where a child has stopped breathing and become cyanotic during the course of a chloroform narcosis, and I have yet to find the first case of this kind when ether was used. I might add here that I frequently started the child with chloroform, as we all know it is quicker to put a child to sleep with chloroform than with ether, and when the child was under its influence, though not profoundly, I started with my ether narcosis and carried it to complete anesthesia.

In the alcoholic individual—I mean by that a patient who is accustomed to imbibe to a certain extent every day a more or less quantity of alcoholic liquids—I have found a hard individual to administer ether to, as when such a patient comes to the exciting stage he will frequently become cyanotic and ugly, and will secrete much saliva. This I charge to the intoxicating effects of the ether, and it seems hard for him to pass beyond this stage. I have used from one to one and one-half pounds of ether in trying to subdue such a patient, because the operator would not allow me to use chloroform. Now, do not misunderstand me to say, use chloroform, because if there be any one class of patients in whom chloroform is contra-indicated, I believe it is in the alcoholic; but if you will use your ether until the exciting stage is reached, and then carefully drop one or two drops of chloroform with the ether you will subdue the patient very quickly, and then you can continue with the ether.

I do not claim this idea to be original, yet I never saw it used, or advocated in any article I have ever read.

Now, then, as to the general run of cases: When would you use ether and when chloroform? I think we all agree that in our obstetric work all are using chloroform, although lately I have been using more and more ether when the patient becomes nervous and will not assist nature, and here we use it simply as a placebo. Here, let me warn you to be careful in its use.

You must be careful if there is any open artificial light in the room, for fear of the vapors taking fire and thus causing an accident. In our operative cases, I think it is good practice, if there are no contra-indications, to always use ether, and yet, again, men of wide experience use chloroform almost altogether without any apparent trouble or misfortune.

Why such different results?

As I said before, in my own experience and in that of those with whom I have been directly or indirectly connected, I never saw one case which was in any way alarming to either anesthetist or operator; and, by the way, "it certainly alarms the most collected and cool operator to be informed that the patient is blue or has stopped breathing." I say, I never saw one case which was alarming where ether was used. On the other hand, I have seen one death, and remember two others, from chloroform, and these all occurred in the Twin Cities and where the anesthetic was administered by men who, though not what you call expert anesthetists, were men who administered anesthetics every day. In other words, internes at the hospitals where the deaths occurred. For fear you may credit the case I have reported to the hospital with which I was connected, I will say it did not happen there; it happened one day when I was visiting one of the other hospitals, although I still had not yet begun practice, and I assure you it made an impression on me I shall not soon forget.

Taking this as a basis for my argument in favor of ether as an anesthetic, I feel that it is unnecessary for me to dwell much further on the relative safety of the one over the other; yet I will say that much depends on the one who administers either ether or chloroform. I might add here the conclusions arrived at by the committee of the British Medical Association, who were instructed to get data on the relative safety of these two drugs, which was as follows:

"We are convinced that by far the most important factor in the safe administration of anesthetics is the experience which has been acquired by the anesthetist, and, therefore, do not, as is the universal custom, employ the least experienced assistant to administer the narcotic."

How, then, should we administer an anesthetic?

First, consider your patient as has been pointed out: Examine the heart, lungs, arteries, and kidneys; obtain the age and moral and social standing.

Second, get his confidence by a few remarks

to quiet his dread or even horror of the narcosis, and let me add that I have found it of extreme value to administer a hypodermic of morphine, gr. $\frac{1}{4}$, atropine, 1-150 to 1-100 gr., about fifteen minutes before the expected time for operation. This not only subdues his mental fear, but inhibits too free a secretion of saliva. This is especially true in ether narcosis. Also, I believe it lessens the post-anesthetic nausea and vomiting.

Third, start your anesthetic slowly and use an open mask, both in chloroform and ether anesthesia; but when you use ether, have several more layers or thicknesses of gauze over your mask than when you use chloroform, and never place your mask over the patient's face at once. Hold it from six to eight inches above his face, and cover his eyes with a piece of gauze or folded towel, and now ask him if he smells the anesthetic before you place one drop on the mask.

When he says no, you drop one or two drops on the mask and gradually increase the quantity, if it be ether you use, as you slowly but gradually bring the mask closer to his face until you are able to place it directly on the face.

Now, you are able to give it more freely, but never give it too fast. Guard against this, and you will have no trouble in putting your patient under its influence, and always remember to talk to your patient while he is going under its influence, and, I feel satisfied, you will produce less dread or fear of the anesthetic than by any other method, so far as the patient is concerned.

If you are giving chloroform, here, too, commence slowly and watch the pulse and respiration carefully. I believe your finger should be on the pulse all through the narcosis. If the patient's pulse-rate increases up to 120 to 140 be careful; yet, if it is full and regular and the pupil is contracted after the primary dilatation and the respiration is free and regular, you are in no immediate danger; but always be on the alert. If, now, the pulse drops to 40 to 60 beats per minute, and even though the respiration is good, remove the anesthetic and mask, and allow the patient some air. This patient does not take chloroform very well, and if you must still continue the narcosis, I advise you to start him on ether. As a rule, we see no bad results from ether, although I believe cases are seen where ether has caused pneumonia or bronchitis, or both, also nephritis; but these misfortunes are rare.

Now, a word in regard to the administration, after the patient is asleep, of both chloroform

and ether. I am thoroughly convinced that most cases that are given an anesthetic are given too much. I know we can place a patient in a profound stupor, or we can equally well dull the sense of pain and have the patient relaxed and yet not be soaked with the narcotic; in other words, the anesthetist should see how little of the anesthetic will be needed to keep the patient quiet, rather than, as is the usual custom, how much can be given him without causing trouble, as apnea or cyanosis or irregular pulse.

I know from personal experience that a patient can be operated upon under ether narcosis when his sense of pain is obtunded, but reason has not left him. For instance, I was operated upon, and when the anesthetist said to the surgeon, "he is ready," I heard it and was able to think whether or no I would feel pain. I also remember when he made the incision in the skin, and I must have moved reflexly as there was no pain, only a sensation of cold steel passing over the skin; and when he said, "Give him more ether, Doctor," I remember no more till I woke up.

Here, I wish to say that we should eliminate all unnecessary noise and loud talking in the room where a patient is being narcotized. It is especially obnoxious to a patient to hear a yarn or a pun in such a serious moment, and, as I said before, we should gain the patient's confidence and try to overcome any fear on his part by well chosen words of cheer.

Now, how do you know he is asleep? This sometimes is very difficult. I think it a pernicious practice to jab your finger onto the cornea to see if it has lost its reflex. If you will watch the pupillary reflex and the movements of the

eyeball in its socket it is of greater value to you than any other sign except respiration, perhaps.

After you have noted the primary dilatation of the pupil and a contraction, your patient is nearly asleep, and especially so when you also notice a free, easy, rhythmical breathing, and the eye does not twitch when the lid is touched or lifted upwards. These signs are not always infallible, yet, as a rule, they are fairly good evidence that the patient is in a hypnotic state.

It is taken for granted that you constantly watch the pulse, and any great deviation from the normal should always put you on the alert, and if you fear sudden collapse or impending danger, do not be afraid to order your hypodermic of strychnine even up to 1-5 gr., as I believe it is better to give stimulation too soon than too late when the time is past for it to do any good.

After your patient is asleep, very little narcotic is needed, but he needs careful watching, and you must be guided by signs he shows as to how much is needed in each case.

In closing, I want to say that an anesthetic is not as trivial a matter as most physicians think, and I hope the day will come when more attention shall be paid to anesthesia and anesthetics in our medical schools, as most of our senior students leave school with the erroneous idea that anybody can safely administer an anesthetic, and thus lives are placed in jeopardy in inexperienced hands.

Let us remember that next to the operator the anesthetist is of great importance, and, in fact, I feel he is equally responsible with surgeon or physician, for whom the anesthetic is given.

HARMONIZING MEDICINE AND PHARMACY*

By ANDREW J. ECKSTEIN

NEW ULM, MINN.

Since the time when the separation between medicine and pharmacy occurred, giving rise to two professions where but one existed before, important changes have taken place, and great advances have been made, in both vocations. This specialization is typical of what has occurred in all fields of human endeavor, and as it is part of that orderly evolution necessary to the progress of society it is essential that the two professions work in harmony and unity at all times.

in order that the best interests of each, and of that large society which they mutually serve, shall be promoted.

Medicine and pharmacy have not yet evolved far enough in their distinct divisions of activity to become entirely separated, or to prevent, at times, slight friction at some points. This, I believe, is a temporary and rapidly vanishing difficulty, and one which every effort should be made to remove.

Reasoning from any point we like, or adopting any analogy we see fit, we are apt to arrive at

*Read before the Northwestern Branch of the American Pharmaceutical Association at Mankato, May 6, 1908.

the conclusion that, as human knowledge grows and as society advances, the work of the world will become more and more specialized, and this indicates that, as a matter of progress, medicine and pharmacy must become fully and completely separated, and yet at the same time become more dependent upon each other. In our desire and efforts to hasten progress and to work at all times for the best interests of human society as a whole, we must work for harmony, for unity of purpose, and for proper co-ordination between our two branches of endeavor.

Pharmacy must usurp none of the special functions of the medical profession, but, instead, it should labor to be of the utmost service in its own particular field, while medicine, if it is to have the proper support of pharmacy, should do nothing which hinders or discourages the growth of the distinctly scientific type of the profession.

While a certain latitude for criticism should always be allowed, and is necessary for the proper adjustment of the relations between the two bodies, narrow criticism, or that common pastime which, in popular parlance, is called *knocking*, should never be indulged in. The world is wide, work is plenty for those who can do it, and every profession has an unlimited opportunity for the employment of all its energies in its own special fields.

Pharmacists should abstain wholly from counter-prescribing and thus remove a common cause of criticism. Pharmacists should not show favoritism in recommending physicians, though they should not be deprived of some latitude which permits them to discountenance unworthiness, and physicians should not advise or command their patients to go to any certain pharmacist, except in cases where the interest of the patient clearly requires such discrimination.

Physicians should, as far as may be possible, cease dispensing and should discourage the tendency to do so among the profession at large. I believe, ultimately and as a result of true progress, physicians will cease to dispense any other than emergency remedies. I believe that they will also cease to use all semisecret or proprietary preparations, that they will formulate their own prescriptions, or employ only those ethical preparations that pharmacy will prepare for them and include in its standard formularies. If this is in the line of scientific evolution, an attempt to conform to it should be made now, even though entire harmony in this regard is not possible at present.

Physicians, as a rule, are overlooking the results of the researches of both professions that are embodied in the U. S. Pharmacopeia and the National Formulary. In these, they will find preparations that have resulted from the best knowledge and widest experience of both medicine and pharmacy, and which have a value that cannot be possessed by preparations that are intended for purely commercial exploitation. There is in this one direction an opportunity to strengthen those proper relations which should exist between the two professions.

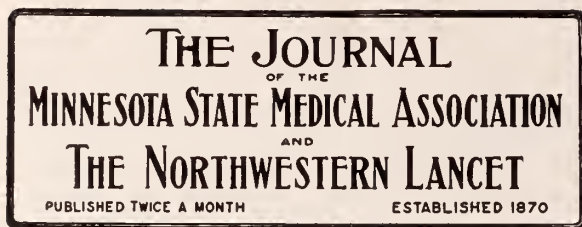
The preparations embodied in the Pharmacopeia and the National Formulary are worthy of universal use by the medical profession, and the fact that they are not so employed is a ground for just criticism. We are living in a time when all earnest men are laying aside petty differences and are seeking to promote higher and advancing ideals in both commercial and professional life. We have reached an era when little causes of friction should be dropped.

The narrower attitude on either side begets friction and often suggests graft or unfair considerations to observing members of the public. Both sides should discountenance jealousies, special favors, boys'-play, or unprofessional attitudes of any kind. If there are any real causes for friction, the thing to do of course is to get together and work for the removal of these abuses.

The essential thing is to get on and keep moving. Life is too short for recriminations or to have progress arrested by members of the "anvil chorus." If pharmacists and physicians have respect for the labors of each other, if they believe that only in harmony and in the adherence to high ideals lie the best interests of all concerned, they should be able to evolve conditions that will be mutually satisfactory. Just a little sinking of natural selfishness and suspicion into regard for the general welfare, and a general agreement as to the ideals to be upheld and conformed to, then friction will cease and true progress will be accelerated.

SYPHILITIC FEVER

E. D. Newman, of Newark, reports a case of true syphilitic fever, which is a rare form of syphilis. By this he means a fever resembling typhoid, which occurs during the second incubation, and about two months after infection. It may be continued, intermittent, or remittent. The eruption occurs during this fever. Mercurial treatment benefits it at once.—Medical Record.



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DEATH FROM ANESTHESIA

Dr. Lawrence W. Littig, of Iowa City, Iowa, in a paper read before the Western Surgical and Gynecological Association, at St. Louis last December, sounds a timely note of warning by his efforts to tabulate the deaths that occur during the administration of an anesthetic.

He mailed 3,500 circular letters to physicians practising in Iowa and received 800 replies. He rejected reported chloroform fatalities occurring from two to four days after anesthesia. He rejected ether fatalities occurring "at the close of a long and difficult abdominal operation." He also excluded deaths in operations of sufficient magnitude to cause death on the operating-table or soon after. He likewise excluded obstetric fatalities in which placenta previa or severe hemorrhages complicated delivery, pneumonia, or other lung complications following gall-bladder or other abdominal work, and his final figures showed 63 deaths from chloroform and 4 deaths from ether.

Ten fatalities occurred in dental practice, 5 fatalities in confinement cases where chloroform was used, 1 each in which ether was employed, hyoscin, morphin and cactin, ether and chloroform sequence, and 1 chloroform-ether sequence.

The writer concludes that chloroform is vastly more dangerous than ether, and especially so in minor work and at the beginning of administration.

The discussion of the paper was lively and, as usual, it brought out praise and condemnation for both ether and chloroform. The majority of surgeons concluded that ether is safer, particularly when given by the drop-method. Arteriosclerosis and pulmonary complications contraindicate the use of chloroform. The arteriosclerosis presumably embraced kidney insufficiencies.

It is evident from the discussion that a trained and skilled anesthetist is essential in all operations where an anesthetic is to be used.

The necessity of teaching students in our medical schools the principles of giving anesthetics and the choice between ether and chloroform in given cases was strongly emphasized. The deaths from anesthesia were due largely to incompetent administrators who took all kinds of chances and neglected the primary essentials, the individual's potentiality, his diseases, his condition at the time of operation, his fears, and the use of excessive amounts of the anesthetic. Stress was laid upon the quieting of the patient by soothing suggestions and the careful attention to details in administration.

It is exceedingly unfortunate that anesthetics are so carelessly used by all sorts of doctors without thought of danger and disaster. If the truth were known, there are an enormous number of deaths from chloroform and ether that are never recorded. Shock, heart-failure, and prolonged operations are usually given as causes of death, whereas the intoxication by anesthetics in subjects who have arterial disease, kidney insufficiency, etc., causes death by a poisoned blood-stream in the nervous system, notably in the floor of the fourth ventricle.

The University of Minnesota, in its medical department, has for the past year given practical and clinical instruction to its students with this idea in mind, that all graduates shall know how, why, and when to give an anesthetic. If this is to be a feature in all medical colleges the number of deaths from anesthetics will be reduced to the minimum.

PSYCHOTHERAPY FROM A MEDICAL AND RELIGIOUS STANDPOINT

Psychotherapy is a term that means much or little according to one's viewpoint. Many med-

ical men and many invalids are looking to what has been called "unconscious therapeutics" for valuable aid in the treatment of disease, real or fancied.

Plays are written, based on suggestion, telepathy, and alleged studies of psychological problems to attract theatergoers. Churches are establishing clinics for the treatment of nervous disorders, and everyone, for the time, is enthusiastically or mildly interested in the new forms of treatment.

Mrs. Sears, a regularly graduated physician, has plunged headlong into "New Thought" and is endeavoring to establish a new school of healing. The "New Thought" college and church is a great straddler, as it embraces students of theosophy, occultism, new health-food rules, the former followers of half-forgotten "isms," graduates of the Kneipp cure, disciples of uncooked food and fireless meals and fired cooks, believers in fasting and mighty mystic powers—anything, in fact, that was formerly a belief or a fad you may silently drop and adopt the "New Thought" without compromise. Mrs. Sears has a sturdy following of well-dressed and well-fed women who, in joint session, extended their acknowledgments to the late Dr. Phineas Parkhurst Quimby, of Boston, who started the famous Mrs. Eddy on her record-breaking career, made possible only by taking from his writings such ideas as suited her purpose. Mrs. Sears has of course written a book with a title that sounds like a good seller, "Key to Health, Wealth, and Love."

The authoress believes that disease exists, but claims that it is due to a failure of the higher cosmic intelligence which causes it.

You may do as you please in the new and pleasant cult—consult a physician, take medicines or suggestions, but, above all, you must strive to acquire health, you may imagine you have wealth, even though you have it not, and at least you must feel opulent. Last of all, love is required to illuminate the dull gray of the commonplace. The motto of the new school is as stirring as a college yell—"We are it, all in all!"

The psychotherapeutic wave that is now under observation and consideration is an extremely valuable adjunct to the physician, and should receive his close and earnest attention. The fundamental principle behind all of the healing cults is suggestion. No one who is a student of medicine can afford to ignore its beneficial results. The physician who overlooks the complaints of the neurotic and is heedless of the true feelings

of one who is depressed is not a broad-minded man. He does not understand the working of the nervous system. The failure of the man in general practice or the internalist who ignores nervous symptoms is to be held strictly accountable for the aimless wanderings of patients from cultism to charlatanism. If physicians were more thorough in their analysis of symptoms and kept the worth of good wholesome common-sense suggestions in mind they would make a mental impression that would prevent the neurotics from flying to faddists for relief.

After all, the important element in the treatment of nervous disorders is in the personality of the physician and his skill in examination and diagnosis. To the former the patient attaches the utmost importance. Confidence inspired is a long step toward control of the patient. Exclusion of serious disease by careful attention to bodily symptoms and the use of suggestions, daily repetitions of encouragement, and a little medicine with good, healthful rules, are factors which make psychotherapy worthy of its name.

From the medical to the religious treatment of the neurotics is a long step and one that is in the experimental stage. Already a danger-signal has been raised by the Rev. Dr. Joseph H. Crooker, "who thinks that only a fresh crop of ills and ailments can come from the new movement of mental therapeutics current in certain churches." He further says: "For the clergy to ignore the verdict of the ages and attempt to revive an outgrown function will be harmful to both public health and to the Christian church, as it would be for surgeons to substitute magic for anesthetics, or for doctors to give physic where repentance of sin is needed."

The physician has a responsible position to fill, and the clergyman has already more than he can do to keep the morals of the public free from contamination. It may not be wise to attempt a mixture of the two professions. One or the other must prevail.

NORTH DAKOTA STATE MEDICAL ASSOCIATION

The twenty-first annual meeting of the North Dakota State Medical Association was held at Grand Forks May 12th and 13th. The program was sufficiently long to comfortably cover the two days' session, yet gave ample time for social visits. The mayor of Grand Forks, Dr. J. D. Taylor, gave the address of welcome, and the mayor of Bismarck, Dr. F. R. Smyth, responded. Both of the mayor doctors are trying

to see who can administer to the best needs of their respective cities, and both seem fully capable.

Dr. Chas. MacLachlan, in his presidential address, reviewed the progress in medicine during the past year and made valuable suggestions regarding the care of the tuberculous by a state fund. He appointed a committee who will canvass the situation and will go before the next legislature to ask for a specific amount with which to start a state sanatorium for consumptives.

The secretary, Dr. Rowe, looked after the visitors, the business of the house of delegates, and the banquet, in his usual vigorous style.

The Association has about 300 members and is active in medical politics.

DR. OTIS S. HUTCHINS

The unexpected death of Dr. Otis S. Hutchins, of Canby, Minn., demonstrates the constant danger that surrounds the physician and surgeon. Dr. Hutchins had operated upon a case of suppurative appendicitis ten days before, and in some way, probably by rubbing his nose with his finger, had infected an abrasion in his nasal mucous membrane. He died in five days.

Dr. Hutchins was born in Wisconsin 38 years ago and graduated from Rush Medical College. He has practised in Canby since his graduation twelve years ago. He attained a high standing in the community, and his memory will long be honored by the men and women who came into intimate contact with him, either professionally or socially.

REPORTS OF SOCIETIES

ANNUAL MEETING OF THE N. D. MEDICAL ASSOCIATION

The annual meeting of the N. D. State Medical Association was held at Grand Forks on May 12th and 13th, and was a meeting of great importance, for great themes were handled in a manner that means great results in behalf of the public.

Dr. F. R. Smyth, the president of the Association, is an ideal presiding officer, whether he sits as mayor of Bismarck or as the director of a serious body of medical men.

The Association announced its hearty co-operation with the national movement to stamp out

tuberculosis. It is in the forefront of the war against quack remedies and quack practitioners. It stands for the highest attainable requirements in medical education. The work of its "Public Health Laboratory" has already gained national recognition for its efficiency. The director of the laboratory, Dr. Gustav F. Ruediger, is a man of marked ability, and he is especially a man who does things. His presentation to the Association of the work and the aims of the laboratory was admirable, and was heartily received.

It is greatly to the credit of the medical men of North Dakota that they have contributed so much to the enforcement, in many respects the most rigid in the country, of the pure-food law; and also that they propose to put all sanitary matters of the state in the hands of physicians.

The deliberations of such a body of men are of wide interest, and although the daily papers of Grand Forks reported the meetings admirably, it is to be regretted that all the medical men of the Northwest cannot have the inspiration which comes from reading a detailed account of such a meeting.

The men outside of the state who read papers before the Association were Dr. Charles H. Mayo, Rochester; Dr. Alex R. Colvin, St. Paul; and Dr. Judd Goodrich, St. Paul.

Officers were elected as follows: President, Dr. H. A. Beaudoux, Fargo; vice-president, Dr. J. E. Countryman, Grafton; secretary, Dr. H. J. Rowe, Casselton; treasurer, Dr. John D. Taylor, Minot; counselors, Dr. H. M. Wheeler, Grand Forks, Dr. F. R. Smyth, Bismarck, Dr. G. A. Carpenter, Fargo.

The meeting next year will be held at Fargo.

NEWS ITEMS

Dr. M. P. Bachman, of Iowa, has located at Janesville.

Dr. P. A. Smith, of Faribault, has gone to Philadelphia for post-graduate work.

Dr. E. G. Renner has moved from Groton, S. D., to Aberdeen, S. D.

Dr. J. B. Lewis, of St. James, has gone to Philadelphia for post-graduate work.

Dr. H. S. Clark has moved from Glencoe to Minneapolis, and has offices at 709 Nicollet Ave.

Dr. J. E. Corrigan, of Sioux Falls, S. D., has moved to Spooner, in this state, and opened a hospital.

Dr. Fred A. Carrell, of Rushmore, has decided to retire from practice. He will take up farm life.

Dr. H. G. Fish, who has practiced at Wheatland, N. D., for twenty-three years, has moved to Hope, N. D.

Dr. H. E. McLaughlin, of Mansfield, Ohio, has taken the practice of his brother, Dr. W. E. McLaughlin, at Willmar.

Mankato has offered \$9,000 in cash and a suitable site for the hospital to be built by the Lutheran Evangelical Association.

Dr. G. G. Cottam, of Rock Rapids, Iowa, has fitted up rooms in his office building for hospital purposes, and has two nurses employed.

Dr. A. H. Keller, of Sioux Falls, S. D., has been East doing post-graduate work, especially in diseases of the nose, throat, and lungs.

Dr. G. C. Hanson, of Knox, N. D., has temporarily retired from practice on account of poor health. His practice will be taken by Dr. L. A. Harris.

Dr. Frederick H. Scott, of the University College Hospital, London, has been appointed assistant professor of physiology in the State University.

The Sacred Heart Hospital of Tomahawk, Wis., will erect an \$18,000 addition to its building, this amount having been recently donated to the hospital.

Dr. L. W. Anderson, a State University graduate, who has been practicing at Bayfield, Wis., has moved to Atwater, taking the practice of Dr. A. M. Thompson.

Dr. Otis S. Hutchins, of Canby, died last month, at the age of 38, of blood-poisoning due to infection following an operation for appendicitis performed by him at a farm-house.

Dr. C. W. Abbott, of the Lenont Hospital at Aurora, has been transferred to the hospital at Mt. Iron. Dr. Fisher, of Virginia, takes Dr. Abbott's place at Aurora.

The citizens of Marshall have determined to have a hospital. One of the school buildings of the city and over \$5,000 in cash have been donated for this purpose.

Dr. A. L. Kilbourne, of the State Hospital at Rochester, was elected president of the National Medicopsychological Association which was in session last month at Cincinnati.

Dr. Montague Francis, of Chicago, has become a member of the staff of the More Hospital at Sparta, to take the place made vacant by the removal from the state of Dr. N. A. Day.

The contract for a portion of the new ward building for the State Hospital of Jamestown, N. D., has been let, the price being \$33,200. The inside finish is not included in the contract.

Dr. Thomas M. Thayer, of the State Hospital at Fergus Falls, was married last month to Miss Mary Eleanor Pardee, of Minneapolis. Dr. Thayer will engage in practice at Herman.

The International Congress on Tuberculosis, to be held in Washington, D. C., Sept. 21 to Oct. 12, announces a large list of prizes for papers, exhibits, etc. Several of the cash prizes are for \$1,000 each, and one is for \$1,500.

Drs. Archibald MacLaren, of St. Paul, Dr. W. J. Mayo, of Rochester, and Dr. J. E. Moore, of Minneapolis, were the only Northwestern surgeons attending the meeting of the American Surgical Association, held at Richmond, Va., last month.

Dr. D. C. Cowles, of Minneapolis, had a narrow escape from death last month in an accident at a grade-crossing. An engine completely destroyed his automobile and hurled him a long distance. He escaped with some broken ribs and painful bruises.

The hospital at Dickinson, N. D., conducted by Miss A. B. Stein, has gone into new quarters, and can now take care of twenty-five patients. Miss Stein, who is a graduate nurse of St. Joseph's Hospital, of St. Paul, has made a marked success of hospital work.

Dr. L. C. Weeks, of Detroit, has found the growing demands upon his time made by his hospital cannot be met without sacrifice of his private practice, and so he has decided to give up the hospital. It will be sold either to the city or to a hospital company.

Dr. D. H. Lando, who went from St. Paul a few months ago to accept a position on the staff of a Vienna hospital, died last month from the effects of an operation. No details have reached here. Dr. Lando was married just before sailing, to Miss Ida Oberg, of St. Paul.

The grand jury has indicted the manager of the Gates Sanitarium of Minneapolis. The charge is for obtaining money under false pre-

tense. It is expected that similar action against other so-called sanitariums will follow. It seems well-nigh impossible to protect the ignorant against the quacks who prey upon the sick.

Dr. W. M. Chowning, of Minneapolis, in company with Dr. H. T. Ricketts, of Chicago, spent most of the month of May in Montana, continuing his study of the Rocky Mountain spotted fever. It is due to the efforts of these two men that the cause of the disease was discovered, and they are now looking for a remedy to cure it.

Dean F. J. Wulling, of the Pharmaceutical Department of the State University, lectured last month before the druggists of Mankato and the adjoining towns, upon the U. S. P. and N. F. The physicians were invited to attend the meeting and take part in the discussion, which they did to the profit of druggists and physicians.

The Traill-Steele (N. D.) County Medical Society met last month at Mayville, and had the best meeting in its history. The following were elected officers for the current year: President, Dr. E. C. Haagensen, Hillsboro; vice-president, Dr. N. E. White, Mayville; secretary, Dr. S. A. Berg, Mayville; treasurer, Dr. Rogers, Portland.

Dr. John B. Murphy has resigned as professor of surgery and co-head of the department in Rush Medical College, and has accepted the professorship of surgery and head of the department in Northwestern University Medical School and position of attending surgeon at Mercy Hospital. Dr. A. W. Meyer, of the University of Minnesota, and formerly of Johns Hopkins, has accepted the professorship of anatomy; and Dr. A. N. Richards, of the College of Physicians and Surgeons, of New York City, has been appointed professor of pharmacology in the same school.

The meeting of the State Medical Association of Montana, held at Anaconda, last month, was the largest and best in the history of the association. Dr. Wm. M. Chowning, of Minneapolis, who has been studying the Rocky Mountain spotted fever for several years, spoke before the association upon the subject. The following were elected to office for the current year: President, Dr. I. D. Freund, of Butte; vice-president, Dr. R. A. Horsky, of Helena; secretary, Dr. Grace Wilson Cahoon, of Butte, (re-elected for the fifth time); treasurer, Dr. C. T. Pigot, of Butte. The next annual meeting will be held in Missoula, in May, 1909.

The twenty-ninth semi-annual meeting of the Minnesota Valley Medical Association was held at Mankato on May 12th, with a large attendance. The president, Dr. F. A. Dodge, presided. A large number of papers were read, including the following by St. Paul and Minneapolis men: "Tests of the Renal Function," by Dr. W. A. Dennis, St. Paul; "Treatment of Recurrent Tonsillitis," by Dr. R. A. Campbell, Minneapolis; "The Necessity of Making Rectal Examination with the Aid of Instruments," by Dr. C. D. Harrington, Minneapolis. At the evening session, Dr. H. M. Bracken, of the State Board of Health, spoke on "Tuberculosis," the public being invited to hear his address.

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SOME INDICATIONS FOR CRANIOTOMY*

By R. E. FARR, M. D.

MINNEAPOLIS

There is no branch of surgery which requires more special knowledge and skill than surgery of the brain. Great advances have been made in this line, but the development has not kept pace with that seen in other fields, with the possible exception of that of the thorax. Probably the future will see this class of work in the hands of specialists who will devote their entire attention to it. At the present time and in this locality, at least, the bulk of brain surgery must be handled by the general surgeon, who, in turn, should have the assistance of the neurologist, in order that the patient may not suffer from the lack of technical knowledge regarding the nervous system—knowledge which most of us find it difficult to acquire.

Craniotomy should not be undertaken without indications of a very definite character. These operations have a steadily decreasing mortality, and in case of shock or hemorrhage a two-stage operation may be done. Cushing has recently shown that the second portion of the operation may be done without anesthesia, pain-sense being absent from the brain and its membranes.

To attempt to discuss all, or even most, of the indications for opening the skull would carry me far beyond my allotted time. I have, therefore, elected to speak of some conditions which I have had the privilege of treating surgically, with the hope that the discussion may render our

duties more obvious in the practice of this important branch of work.

FRACTURES

The skull is most often opened for the purpose of repairing injury resulting from fracture; and in a certain proportion of cases it is a grave question whether to interfere or to follow an expectant plan of treatment.

In considering the proper plan of procedure in the treatment of fractures of the skull it may be well to review, briefly, certain facts in connection with the physical conditions which result from these injuries. It is well to remember that the aperture of exit of a foreign body through the skull always exceeds in extent the aperture of entrance; that fracture of the inner table usually exceeds that of the outer table in extent; and that fracture of the inner table may exist without any visible or palpable signs of injury to the outer table. Also that the fracture of the inner table may not correspond at all closely in location with that of the outer table.

As important sequelæ of these injuries we may have, immediately, injuries to the membranes, sinuses, meningeal vessels, or the brain substance. More remotely, we may have meningitis, cerebral abscess, meningeal thickening, chronic cerebritis, arachnoid cysts with resulting cephalalgia, Jacksonian epilepsy, or insanity. Perhaps 50 per cent of fractures of the skull are accompanied by injury to the brain and vessels.

Our treatment must be directed toward the

*Read before the Hennepin County Medical Society April 20, 1908.

repair of the damage and the prevention of all or as many of the remote sequelæ as possible in each case.

It is difficult to establish absolute rules, as these injuries result in lesions of a very widely different character, but, in general, we may say that the indications are to trephine in all punctured fractures and in all depressed fractures in adults, either simple or compound. I know that many surgeons do not interfere in cases of simple depressed fracture of the vault in the absence of focal symptoms, and, still, when we consider the mechanical conditions which usually obtain, i. e., greater injury to the inner than to the outer table, the uncertainty as to what the conditions really are, the great amount of damage that may be present without producing immediate symptoms, and the disastrous remote results which may and often do ensue, it would seem proper to interfere in doubtful cases at least. Aside from the restoration of the parts to their normal condition as nearly as may be, we at once settle the question of hemorrhage, with its resulting blood-clot, and of laceration of the membranes and underlying tissues, and are in a position to deal with them in a positive manner, thus reducing to a minimum the immediate and remote bad effects which, only too frequently, follow these injuries.

Where operative treatment is indicated the important question of waiting for the reaction from shock to take place will often put one's judgment to a severe test. It is not always easy to decide between shock, concussion, and compression from hemorrhage, or, when these conditions are associated, as they often are, to predict whether a better chance will be afforded the patient by adopting a waiting plan or by proceeding at once to operation, providing the surroundings are satisfactory. The following case illustrates this point:

CASE

O. P., aged nine years. Injured by falling down an elevator-shaft. Seen at 8:30 p. m. Nose and mouth bloody. Legs and feet spastic. Pupils equal and reacted to light. Unconscious.

On the posterior parietal surface a marked depression could be seen and felt, and the fragments could be felt to "crunch" when manipulated. The pulse was slow, about 100. No other fractures present.

After careful preparation a few breaths of ether were given and a scalp incision made over the depressed bone. One large piece was found projecting deeply into the brain substance. The

dura was quickly sutured and the scalp closed, leaving a small drain. The operation lasted twenty minutes. His condition did not change materially, though the pulse became more rapid. During the next twelve hours he vomited large quantities of blood, and the urine showed sugar and hyaline casts. Temperature, 101° to 102°. Death followed thirteen hours after operation.

In this case it might have been better practice to wait for the symptoms of shock to subside, but the skull depression was marked, anesthesia almost unnecessary, and I thought it better to proceed at once, elevate the fragment, and check hemorrhage if it were taking place. The operation consumed less than twenty minutes and probably did not affect the unfortunate outcome in any manner. Death was due to extensive trauma to the brain-substance, possibly complicated by some internal injury, as evidenced by the bloody vomitus.

A few years ago I saw a case in consultation. The man had fallen from a moving train. He was unconscious and hemiplegic. The symptoms of shock were marked, and he died in two days without having recovered consciousness. No autopsy was allowed. Was not a greater error made in the treatment of this case than in the case just reported?

As stated, the focal symptoms may be entirely absent in the case of even marked depression, but in the presence of local signs we should not hesitate to convert an uncertain into a certain diagnosis and institute the proper and rational treatment.

CASE

Mr. M. S., aged 36 years. Referred by Dr. J. C. Litzenberg. History: Thirty-six hours previously he was struck in the forehead by the corner of a heavy piece of timber during a cyclone. The wound was dressed after cleansing and detection of the broken outer table. The patient felt little inconvenience from the injury and came to the city on the train and to the hospital on a car.

Examination showed a compound fracture of the outer table of the skull at the hair-line in the center of the forehead. Ether was administered and a trephine opening made at the edge of the depressed bone. With Ronguers an area about the size of a silver dollar was elevated, and the broken fragments were removed. The dura was depressed to the extent of one-half inch, but was not lacerated. Much sand and hair were found associated with the bony fragments. The large space between the bony tables at this point

accounts, no doubt, for the comparatively slight injury to the inner table and the entire absence of focal symptoms. The operation was almost without danger, and the chance for immediate and remote ill effects was reduced to a minimum.

The following case will illustrate the necessity of trephining in compound fracture with only slight depression and no focal symptoms, also the lack of correspondence between the location and the extent of injury to the two tables of the skull.

CASE

Johnson, seen in consultation with Dr. U. G. Williams. A boy, 15 years old, lay down to rest, using the Soo railroad track for a pillow, and fell asleep. A few hours later when we saw him at the hospital he was conscious and in good condition. Over the right parietal region the scalp was laid open for about six inches in a curved line. No focal symptoms. After completely shaving the head, ether was given and the following conditions found: The skull was cracked in a line corresponding with the scalp wound, but extending one and one-half inches farther backward. The bone surface below the break was depressed about one-third of an inch. A three-fourths inch trephine opening was made at one end of the wound. As the depressed fragments were removed with Ronguers the dura was found lacerated by the spiculæ of bone which was broken off in a shelving direction for six or seven inches. The laceration of the dura was at one point over an inch from the line of external opening, and at the posterior extremity it extended one and one-half inches beyond the bony break. The dura was closed with catgut and the scalp with silkworm gut. A few strands of silkworm gut were used as a drain, and recovery was prompt.

One of the most distressing sequelæ of fracture of the skull is epilepsy. Statistics apparently show that this condition is much more likely to follow in the neglected cases than in those in which a careful plan of treatment has been carried out.

TRAUMATIC EPILEPSY

According to von Bergman so-called traumatic epilepsy may be divided into three categories:

1. Peripheral nerve lesion in the soft coverings, usually a scar in the latter.
2. Change in bone or dura, hyperostosis, adhesions, etc.
3. Actual brain injuries (always affecting the cortex).

The pathology of the condition is not known. The strongest etiological factor is heredity, but the condition may follow trauma in cases without hereditary taint, and these may, in turn, transmit the condition to their descendants. We know that epilepsy may follow injuries to the extremities and other portions of the body. The sciatic furnishes the greater number of instances of this nature. Here, and elsewhere, relief may be obtained, not infrequently, by excision of the scar or tumor, or by amputation. The condition is a late sequel of injury and only appears after complete cicatrization has taken place. In general, we may say that we should open the skull in cases of epilepsy of the Jacksonian type, in which the history or local signs, or both, point to a previous injury, no matter how remote.

It is my belief that these unfortunate individuals should have the benefit of surgical treatment in cases where the focal symptoms, local signs, or history indicate that trauma is probably a causative factor. One very tenable theory is, that, as these individuals are always lacking in will-power, shocks of unusual severity often produce profound mental impressions; and numerous cases have been reported in which operations upon portions of the body other than the skull have resulted in cures, and that, therefore, we may expect a cure in some of the cases, even though no pathological change is found. The best results, however, occur in the cases which show some lesion, such as depression, adhesions, tumor, or foreign body. Preventive surgery, here as elsewhere, is the most valuable kind of surgery, and undoubtedly relatively few cases of epilepsy follow injuries of the skull which are properly treated at the time they are received. The prognosis may be said to be more favorable in cases in which the attacks are infrequent and have existed for a short period only. Indeed, von Bergman states that these are the only cases in which operation is to be recommended. That trephining has a wider range of usefulness in this condition is illustrated by the following case:

CASE

Mr. H. P., aged 34. Referred by Dr. J. F. Corbett. In 1892 he was struck on the back of the head two inches above the occipital protuberance by a piece of metal, but was not laid up. In 1892 he contracted syphilis and has been treated for this disease ever since, large doses of mercury and potassium iodide having been taken, both together and alternately. In 1894 he became unconscious while on a street-car and was confined to his bed a week after this. Four or

five months later, attacks became frequent, always beginning in the fingers of the right hand and extending to the arm and leg, and then to the whole body. One year later he began to lose the use of the right side after the attacks. During 1895 to 1897 he had only one attack. From 1897 to 1904 he had about two a year, always losing consciousness. Since then the attacks have been light, but very frequent, for one and one-half years since he became hemiplegic. When he came under my care he was having an attack every two or three minutes. A convulsive seizure would begin in the fingers and quickly extend to the arm, leg, foot, and face, and would last from sixty to ninety seconds. He was hemiplegic on the right side and spasticity was marked, and there was some aphasia.

Operation.—A large flap of the Wagner type was turned down, exposing the Rolandic area. The tension was great, but the dura was nowhere adherent. After opening the dura the brain-tissue showed nothing abnormal, and a small amount was removed for examination. The operation caused a slight temporary increase in the paralysis. No bromide was given, but the convulsions entirely disappeared for nearly a year. Bromides had been given in large and frequent doses before the operation, but the convulsions could not be controlled thereby.

BRAIN TUMORS.

Another condition which I wish to consider is that of brain tumor, which is furnishing indications for opening the skull in an increasing number of cases, mainly on account of more perfect localizing and diagnostic methods and improved surgical technic.

The difficulties which confront us in dealing with this condition are manifold:

First. A large and important portion of the brain cannot be reached surgically.

Second. The mortality is high.

Third. Probably only a relatively small number of brain tumors are amenable to surgical treatment. As a noted example of this may be mentioned twenty-three cases in which Oppenheim found at autopsy that only one could have been removed by operation during life.

On the other hand, when we consider that even benign tumors will be fatal if allowed to progress, and that surgical treatment alone can save the patient, an attempt is justifiable in the presence of symptoms pointing to a tumor of the motor or adjoining regions or even of the cerebellum. As a palliative procedure in optic neuritis the indications are almost absolute. Sir

Victor Horsely says that no case of optic neuritis should be allowed to go on to blindness. The disease may retrogress after a time, and blindness only remain. Many cases of this nature are on record. Cushing's so-called "de-compression" operation is a well-established procedure.

As stated above, better diagnostic methods are increasing the possibilities of surgical procedure by allowing earlier and more accurate diagnosis and localization; and improvement in operative technic in addition will materially improve the results.

CASE

Mr. P. J., aged 37. Single. No specific history. Rheumatism in left arm one year ago. Six weeks ago he began having convulsions in left arm, which in two weeks was completely paralyzed. One week later left leg became involved in the same way. Had headache only upon two occasions, and then only for an hour or so. No vomiting. Examination: left hemiplegia, spasticity marked, exaggerated reflexes, and ankle clonus marked on affected side. Pupils normal. Rational, but apathetic. Dr. C. J. Spratt examined the eyes and reported well-marked choked disc in both. Dr. W. A. Jones saw the case and advised large doses of mercury by inunction. After ten days' treatment the apathy had increased to stupor. A large osteoplastic flap was raised by means of the chisel over the Rolandic area; right side. Bulging was not marked, and the dura was not adherent. It felt very tense, however, and might be likened in feel to an inflated rubber ball. No signs of a growth could be detected. When the dura was incised, however, there at once presented a dark spherical mass as large as a walnut. It projected at least an inch above the brain surface. The bone-flap was removed. A hernia cerebri followed. He died about ten weeks later.

From the standpoint of diagnosis and the immediate result of operation this case was gratifying. The tumor was found exactly in the center of the skull opening. Only the character of the neoplasm prevented the possibility of a cure. Life was prolonged for some weeks, and the mental balance was at least partially regained.

In conclusion I would plead—

1. For most careful scrutiny of all head injuries.
2. The elevation of all depressed fractures, whether simple or compound.
3. Craniotomy in the presence of focal symptoms appearing after an injury to the head.
4. That epileptics be given the benefit of an

exploratory craniotomy where the evidence points to the possibility of trauma as a cause, and

5. That cases presenting evidences of brain

tumor be trephined, either for the purpose of removing the tumor, or, where this is impossible, for preventing blindness.

WHAT IS CONSTITUTED IN INSANITY*

BY H. A. TOMLINSON, M. D.

Superintendent, St. Peter State Hospital

ST. PETER, MINN.

In spite of public enlightenment, and sentimental theories to the contrary, individuals suffering with mental alienation are placed under the care of the physician, or committed to the custody of the state, not because they are insane, but because they have committed some overt act; their conduct is such as to be embarrassing to their friends; they are dangerous to themselves or others; or they are vagrant, and dependent upon others for support. Therefore, their mental condition is seldom considered from the point of view of disease. Besides, the definition of insanity depends upon the personal equation of the observer; the mental aberration is looked upon as an entity, independent of the individual in whom it is manifested; arising *de novo*, and in its manifestations *sui generis*.

The confusion resulting from the differing points of view, and the divergent methods followed in the study of insanity, along with the varying conceptions of what is constituted in its manifestations, cannot help but obscure the subject, and make it difficult for the general practitioner of medicine to understand what he is dealing with, to recognize the early manifestations of insanity, and to carry out a method of treatment that will be rational and successful. The first step in the clearing up of this confusion should be the recognition of the fact that probably no one ever becomes insane who is not primarily unstable or defective mentally! This instability or defect may be the result of hereditary conditions, or follow some cause of arrest of development, operating during the first seven years of life, during the period of the rapid growth of the brain mass. Then too it is hard for us to believe that a person is ill who is not incapacitated physically. We recognize in physical illness or injury something that is tangible, that we can, in a great measure understand and appreciate. Besides, unless delirium is present, neither of them interferes with our

relations with the person who is ill or injured; whereas insanity first manifests itself by interfering with the relation of the individual with his surroundings; consequently we are alarmed, and feel helpless because there is nothing apparent to account for the difference in character and conduct, which slowly or suddenly makes its appearance, and changes the individual into an unsocial being, whose behavior is mortifying and alarming, and who must, in some way, be restrained; while he, in his turn, on account of the confusion and self consciousness which characterizes the beginning of the loss of mental capacity, sees in the manner of his relatives and the consternation of his friends, full confirmation for the vague suspicion and unrest which has come to fill him with alarm; and in every word and action of theirs he sees something inimical to his welfare; while all that happens about him is distorted into suggestion of the disagreeable and untoward. For a long time he may be able to control himself, but sooner or later, under the influence of fatigue, worry, or illness, the confusion will increase, and there will be a sudden outbreak of excitement, or even violence. Again, the picture may be reversed, and he will see all of the evil in himself, instead of in his surroundings; seeing nothing in the future but humiliation and defeat for himself, danger and disaster to his family. These are the people who suddenly commit suicide without warning, or homicide and then suicide. These tragedies are of daily occurrence, and yet the relatives and friends of the victims, while they are cognizant of the changes in the character and conduct of the man, never think of attributing them to the real cause, because he converses and answers questions intelligently, and is apparently able to attend to his business; forgetting that in the presence of mental aberration, his very intelligence makes him more dangerous to himself and others, because it enables him to guide and control his conduct in accordance with his perverted view of his surroundings. He knows,

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however, what his condition is, but tries to hide it even from himself, and would deny vehemently that there was anything the matter with him.

From what has been said it will be apparent to you that insanity is made manifest in the individual, by a departure from the normal in his conduct and conversation; without regard to a consonant change in the conditions in his environment. The recognition of the outbreak of mental disturbance is therefore not difficult; but when we have to go further; determine the nature of the aberration and its extent; its probable cause; and, above all, its probable duration, as well as the prospect for recovery; we must have something else to guide us than the manifestation itself.

In considering the subject of the general diagnosis of insanity, we are confronted with a serious difficulty, which results from the involvement of the subject, on account of the various conceptions which are current concerning what is constituted in its manifestations. That is, what is insanity, and what do we mean by the term? We cannot explain its manifestations in the terminology of metaphysics, nor describe the change in the individual as the result of certain morphologic changes in the cells of the brain cortex. The term insanity literally means ill health or unsoundness, and is general in its application, but it is still the best term to use to designate mental aberration; because the euphemistic terms that are at present popular, limit us to the consideration of the variations in the mental manifestations, and they imply that the aberration exists independently of the other activities of the organism. We must recognize that an unsound mind cannot exist in a sound body; also, that while it is true that certain morbid changes are always present in the brain in those who die insane, the same changes are found in the brain cells of those who are not insane; and this is particularly true in old people, and those who have been the victims of toxemia affecting the general nervous system. What, then, is insanity? In seeking for a standard by which to judge between sanity and insanity, we are forced to create an arbitrary, and, in a measure, an ideal individual, with whom we may compare all men, and judge of the existence and degree of insanity in the given case by the departure of the individual from this standard. This ideal individual is the one who can best "adapt internal to external relations." Any deviation from this standard is literally insanity. That is, the mental aberration

is always relative; but it is not recognized as insanity until the deviation becomes so marked as to be conspicuous; on account of so faulty an adaptation of internal relations, as to materially interfere with the welfare of the individual, and his relations with those about him. The various forms which this deviation will assume are determined by the degree of imperfection in the nervous organization of the individual, and the nature of his environment. That is, if the relative imperfection of structure exists in a certain definite direction only, the faulty adaptation will be in that direction; and if the environment of the individual be such as to increase the difficulty of adaptation, the individual is that much further handicapped.

The definition of heredity with relation to insanity, is as much involved by difference of opinion as to its significance, as is the definition of insanity. The usual conception of the relation is, that the insanity is not the result of hereditary conditions, unless the immediate progenitors or collateral relatives have been insane. The equation is not so simple, however. We now know that no one inherits a disease condition, and the parents of the insane individual may have been sound mentally, but the victims of some constitutional disease which affected adversely the development of the child. The recognition of hereditary influence has therefore to take into consideration the transmutation of form in the transmission from one generation to the other of constitutional or diathetic conditions affecting the vitality of the parents at the time of conception. That is, any condition which produces somatic degenerative change in the organism of the parents may be manifested as brain instability or defect in the offspring. Thus the children of the syphilitic, tuberculous, or gouty, may be, and commonly are, the victims of degenerative disease in the nervous system and insanity. So that, while as generally understood, the children of the victims of these diathetic conditions, who become insane, do not directly inherit the tendency, practically they do by the transmutation of the diathetic condition in its transmission from parent to child. Under stress or strain these individuals will break down in the direction in which they are weakest congenitally. If the arrest or imperfection is general the weakness will show itself in the higher functions of the nervous system, because they are the last in the order of development. That this is true is demonstrated by the fact that while the conditions out of which insanity develops are common to all, only

the relatively few are adversely affected by them. Besides, aberration adds nothing to, and subtracts nothing from the mental makeup of the individual.

There is no abstract difference between the conduct of the sane and the insane! The difference lies in the relation of the activities involved to the conditions in the environment, and the degree of control of these activities as they are manifested in conduct. In other words we are dealing with alteration not destruction of function. It is important, in order to avoid confusion, to make a definite distinction between mental aberration and loss of mental capacity; that is, between insanity and dementia. While it is true that the presence of insanity presumes some loss of mental capacity, it is also a fact that mental aberration may be present in any one, and yet not necessarily interfere with his relations with those about him. The insanity becomes apparent only when the individual is no longer able to control the activities that are manifested in conduct, so as to conserve his own welfare, and not harm others; and this loss of control will be found to be always in proportion with the degree of instability present in the individual. This loss of control may be temporary, and the result of anger, pain, intoxication, or disease affecting the vitality of the general organism. But during the time of the absence of control, the conduct of the individual does not differ from that of any other insane person. Indeed in the ordinary relations of life, we determine the sanity of a man's conduct by the degree to which his power of self control is developed; that is, the extent of his stability. In some individuals this loss of control is more easily brought about than in others, and it is also more extreme and persistent. That is, they are deficient in mental capacity. In this category may be placed those who commit crimes of violence and brutality. The history of these individuals shows them to have always been without capacity to appreciate anything except in its relation to self. There has persisted in them the primitive tendency toward the uncontrolled gratification of desire. There is also in these individuals an inherent want of physical capacity, which makes them unable to persist in anything without physical discomfort, and this futility stimulates the craving for alcohol and narcotics.

The experience of all but the most exceptional individuals will furnish incidents that exemplify the conditions, the persistence of which brings about this dysesthesia, as the result of pain,

privation, or grief; and every physician of experience has been called upon to deal with manifestations of mental aberration resulting from stress and strain in social and industrial competition, domestic exigency, or conjugal catastrophe. A study of these individuals and their life history would reveal the fact that their conduct had shown them to have always been unstable. There had been recurrent periods of exaltation and depression, during which they were more or less uncontrollable, intolerant of restraint, and unable to apply themselves definitely to any occupation; while in their periods of normal mental status they were not materially different from their fellows. It would be noted also that this instability was most marked during adolescence, and that it was extreme just in proportion with the lack of those influences in the environment of the individual that conserve the physical welfare and tend to develop self control. However, these people increase in intelligence as they grow older, and attain a degree of self control that usually carries them through life without any manifestation of mental aberration that would materially interfere with their relations with those about them. On the contrary, if the personal habits of the individual are such as to make him the victim of alcoholism or syphilis; or if as the result of constitutional weakness, degenerative changes set in during adult life, as the result of exposure, strain, or overwork; then there begins a similar disintegrative change in the elements of mental capacity. Now if untoward conditions arise, the changes in the character and conduct of the individual soon become apparent in his relations with his fellows; and in accordance with the law of reversion, those attributes that are most primitive tend to progressively dominate the conduct.

Insanity will manifest itself during the different periods of life in accordance with the mental constitution of the individual, and in each epoch its manifestations will be characteristic of the mental makeup of the group in which the individual belongs. That is, in proportion with the degree of intelligence, and the nature of the life experience of the individual. But the suspicion, superstition, exaltation, depression, grandiose, depreciatory, or persecutory ideas; and the religiosity or pietism, will be just the same as might be present in all others with the same amount of intelligence and degree of culture as himself. His estimate of his relations with his fellows must necessarily be based upon the nature of his experiences, and the interpre-

tation of the conditions in his environment will be from the standpoint of that experience.

During adolescence evidence of instability or defect is more apparent, and its influence upon the nature of the aberration more conspicuous. In those individuals in whom the degree of instability is the slightest, there may be only a period of confusion, with alternate exaltation and depression. If the instability is greater, the conditions in the environment which gave rise to the simpler manifestations of aberration will have greater effect and be more persistent; and the confusion may develop into stupor, ecstasy, or trance. The exaltation may become explosive violence; and the depression degenerate into complete inhibition of the processes of relation, coördination and emotion, accompanied by muscular rigidity; and even involving the vegetative processes, so far as they are volitional. In the defective, however, because of the inherent limitation of capacity for relation and coördination, those manifestations that are extreme in the unstable become the primary ones; and the animal-like furtive suspicion and fear, alternate with explosive violence, or the disposition toward seclusion, with extreme inhibition and rapid mental reduction.

In the period of adult life, the individual having acquired more intelligence and a greater degree of self control, insanity is practically always consecutive; and the intellect being more highly cultivated by the diversity and complicated nature of the experiences, there is a more or less prolonged period of introspection preceding the loss of self control of those activities that are manifested in conduct; with the resulting morbid self consciousness. As the rule, too, some physical strain, overwork, or disease, has lowered the vitality of the individual, so that there is a persistent dysesthesia. Ordinary sights and sounds have a special purport, and are associated with experiences in the life of the individual that have been untoward or unfortunate. After a time, and as the result of the persistent dread and suspicion, confusion supervenes, and the voices of those by whom he is surrounded are heard to utter threats or sneers, to make accusations, or suggest ulterior motives for his conduct; while to the sight, the actions of friends or relatives assume a corresponding significance. This self absorption, and the resulting indifference to bodily habits and wants, produces indigestion and constipation. The autointoxication that follows further depresses the functional capacity of the brain, and there develop tactual,

olfactory, and gustatory hallucination; with the resulting belief that the body is unclean or being defiled, or that the food is unfit to eat or poisoned; while the visual and auditory hallucination, and the pictures that result from the wrong relation of external impressions suggested by the morbid self consciousness, end in depreciatory and persecutory ideas, which gradually acquire a substantive basis with a definite sequence. The individual becomes impervious to evidence or demonstration. The persistence of sights and sounds form a picture of what is dreaded and anticipated. Suspicion ends in certainty of belief; the nature of the belief varying with the changes in the conditions in the environment, governed largely by the previous experiences of the individual, changing in form, but always having the same substantive basis; the definition of the belief varying with the amount of loss of mental capacity.

Even the normal individual is not always on the same plane of mental activity. That is, there is a cycle consisting of the normal plane of activity; out of which develops a period of exalted activity; to be followed by a more or less gradual fall to the sub-normal, and then the return to the normal. These variations are most apparent and extreme during adolescence, most conspicuous in the unstable, and in the defective they may be aberrant in the order of their occurrence. The persistence of the normal plane of activity is also dependent upon the physical condition of the individual. Besides, under certain conditions representing strain or exhaustion in the nervous system, a rapid variation in the complements of the cycle may occur, with entire disappearance of the normal plane of activity. Therefore, there is represented in the phases and alternations in the mental activity of the ordinary individual, all of the manifestations which, when extreme and persistent, are described as the evidence of insanity. Were all people exactly alike, and were their hereditary predispositions similar, then, given similarity of experience, and conditions in the environment, we might predicate uniformity in the manifestations of mental activity. But, although this likeness is impossible, there is a certain similarity in both environment and experience that serves for the definition of the average; and gives us the basis for our deductions as to the mental status of each other. Then, too, the variations in the conditions in the environment are never entirely individual, but fall naturally into classes, as they are developed by the common experiences of those individuals who are

associated together, similarly placed, or similarly influenced by the conditions with which they are surrounded; and these individuals would be naturally the ones with similar mental capacity. The man of limited intelligence, and the child, see in the woods and in the graveyard, the forms of animals or men, his enemies, or the spirit of some restless tenant of the grave come to frighten him. In both there is the persistence, as a tendency, of an attribute common to their remote ancestors. The cultivated individual becomes, however, the victim of morbid introspection, sees the vision of his failures or disappointments grown large; or reads in the attitude or actions of those about him the reprobation he dreads, or the malice his self consciousness prompts him to anticipate; and he shrinks, and tries to hide from what he fears will overwhelm him, cunningly plans escape or revenge; or, frenzied with fear, he violently denounces or attacks his enemies, or would defend himself against them. Therefore, the form in which the mental aberration will manifest itself, will be determined by the capacity of the individual to be influenced by the conditions in his environment; and his reaction toward them will be determined by his ability to appreciate his relation to them. In other words, his ability to "adapt internal to external relations." You would not expect the same response from the individual of limited capacity and no culture, that you would from the keen intellect highly cultivated; nor would the definition of their experiences be equally valuable with relation to their individual welfare.

In conducting the examination of a person supposed to be insane, it is important to eliminate the personal equation in yourself, and to be able to recognize its influence upon those who have the patient in charge. Next comes the recognition and appreciation of the natural capacity of the individual, the limitation of his mental horizon, and his attitude toward his environment. You would not expect the same clearness of definition in the conceptions of an illiterate man existing in primitive surroundings as you would in those of a cultured man with a wide mental horizon. As a rule the insane present some or all of the stigmata of degeneracy, both physical and mental; the physical being more common in the defective, the mental in the unstable. They represent different degrees of defect in the development of the individual, and in the nervous system limitations of potentiality. That is, the individual with these evidences of degeneracy present, and the limitations which they imply, might,

under favorable conditions, live his life through without mental disturbance, but does break down under the stress and strain of social and industrial competition, as the result of overwork, or excessive exposure; and his breakdown will be temporary or permanent according to the degree of defect in his nervous organization, and the extent of the strain. Furthermore, none of the symptom groups upon which classification has been predicated are distinct entities, but, on the contrary, all of the different manifestations of mental perversion may be, and often are present in a single individual during the course of an outbreak of insanity; while mental reduction is common to them all. Syphilis, gout, rheumatism, alcoholism, traumatism, etc., are not direct causes of definite forms of mental perversion, but rather, by their effect in interfering with nutrition and elimination, the means of exhausting the limited potentiality of the individual; and the mental perversion which follows may manifest itself in any form. For example, the syphilitic degenerate may, when insane, be either exalted or depressed, excited or agitated, the victim of hallucination, well defined delusion, or mental reduction may be profound from the beginning of the outbreak, and dementia supervene without any active manifestation of perversion; and so with other causes of somatic degeneration. Psychologically, analysis of the aberration of mental processes shows that they are not of different kinds, but vary in degree. Hallucination of the special senses is either pleasurable or painful. The picture formed and the delusion that results have the same characteristics. That is, when insane people are exalted it is because they have agreeable conceptions, and when excited or depressed it is because they have depreciatory or persecutory ideas, their definition depending upon the mental capacity, extent and variety of the life experiences of the individual. Perversion of the olfactory, gustatory, and tactual senses may be and often are concomitants of the belief based upon the visual and auditory hallucination. Visceral consciousness is commonly a most potent factor in the development of the belief that poison is being administered, and the sinking sensation characteristic of some forms of intestinal indigestion, a bruit of the abdominal aorta, and all sorts of gastric sensations, with the suffocative feelings attendant upon gastric distension, are perverted to signify the effect of poison, the administration of anesthetics and narcotics, and electric influence; while among the lower types these sensa-

tions are significant of occult or demoniac influence.

Insanity, although never directly due to bodily disease, is often precipitated by it, and is always accompanied by more or less disturbance of the body functions, and this is particularly true when the patient is the victim of tuberculosis, syphilis, alcoholism, or any other constitutional disease.

Primarily, then, in determining what is constituted in insanity, we have to deal with the cerebral potentiality of the individual, as influenced by the conditions in his environment which exhaust this potentiality directly by overtaxation, or indirectly by the influence of impaired vitality in the general organism upon the limited mental capacity of the individual. Next in importance comes the recognition of the fact that in any given environment, the general conditions are practically uniform for all who are included within reach of their influence; consequently, if these conditions are harmful to some of those who live under them, there must be some inherent weakness in the individual that unfits him to adapt himself to them, so as to conserve his own welfare. When this inability is in the direction of physical activities, the result is apparent to every one; but, strangely enough it has not been recognized as equally obvious that the lack of mental capacity that shows itself in imperfect control, incapacity for persistent effort and definiteness of direction, is the evidence of instability and defect, and, therefore, the expression of a limited potentiality. As conduct represents our response to the influence of the conditions in the environ-

ment, it also indicates the extent of our ability to adapt ourselves to them. Mental processes do not arise *de novo*, any more than do the activities that result from them. Therefore, no matter how incongruous the conduct of the individual with relation to his surroundings, or how distorted his ideas, they must represent pre-existing experiences and impressions, which are wrongly related to the conditions in the environment. By comparison of the conduct of the insane with the conduct of the sane, it will be found that, within the same limits, it does not differ in kind or quantity; and in both cases it is directed toward the same general objects. From the standpoint of the individual, his conduct is the expression of his attitude toward his environment, in accordance with his understanding of his relation to it, and it is the reflex of the content of his consciousness concerning that relation. In the insane, just in proportion with the loss of the power of attention, and the ability to relate and coördinate impressions coming from the environment, will be the aberration of response to these impressions, and the domination of the intellectual processes by pre-existing impressions. The confusion that results is the measure of the strain resulting from the imperfect relation and in-coördination; while the degree of reversion shown by the conduct will indicate the amount of defect present. The extremity of the alternations in emotion, and the extent of the loss of control of the activities that are manifested in conduct will determine the reduction in mental capacity.

IDEAL MEDICAL EDUCATION*

BY F. F. WESBROOK, M. D.

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MINNEAPOLIS

It is indeed fitting that we should come together to do honor to the mother who bore us and to thank again and again our teachers, who, at the sacrifice of personal convenience, comfort, and material advantage, and of time which could ill be spared, gave us, and gave gladly, of the fruit of their knowledge. Occasions like these give the older sons an opportunity of coming to know the younger sons of Alma Mater, born after they have bade good-bye and set out to apply her teachings to the detection and eradication of dis-

ease. It is at such time that we fight our student battles o'er again and re-adjust our estimates of each other, should that have been necessitated by demonstration in actual life of qualities unsuspected in student days or by later hypertrophic development of capabilities which seemed at best to be hypoplastic or by the startling discovery of an almost complete atrophy of some striking trait of character or dominant attribute which had served once as a mark of identification. The oldsters boast of the greater college spirit of their day, and the brilliant teaching and scholarship; and, in general, they bewail the loss of the good

*Address before the Alumni Association of Manitoba Medical College.

things of old, whilst the youngsters, with a cynicism pitiable at their age, but which must inevitably result from closer inspection of those whose mental or physical prowess has been so long held up for their distant and respectful admiration, arrive at an orthopedic diagnosis of clay feet in their quondam idols.

Our feeling to-night may be a mixture of joy at seeing old, and in making new, friends, with grief because of vacancies in the family circle, but we all rejoice as one in the increasing vigor, prosperity, and fecundity which come to Alma Mater with advancing years, and we are glad to see her more suitably housed and equipped for her future labors. I am proud to be one of her sons, and in renewing old and cementing new bonds to-night, I wish to thank you for the honor which you have done me in asking me to be your guest, if, by so doing, I do not appear to forfeit my rights as a son. Even a prodigal, though absent for many years, has inalienable and inherent rights of which he is apt to be more tenacious than of his responsibilities.

I am somewhat in doubt as to whether I was asked to speak on "ideal medical education" or of "the ideal in medical education," and perhaps it is a matter of no importance, since the ideal is unattainable, for, if attained, it is no longer ideal. Our ideals vary just as do our individualities, but since they should be kept for all of us just out of actual reach, the necessity of continued readjustment of the ideal above and beyond actuality supplies a spirit of progress which, in no calling and in no age, has been more needed nor more in evidence than in the medicine of to-day.

The doctor is not an artisan, nor is he an artist. He is not simply a scientist, nor yet a philanthropist, despite the claims made by many of poetic temperament, and by a few of the profession who honestly believe that they have gone into and remain in medicine for the good which they can do to others. He is led, let us hope, not by a desire to make money, for under existing social and economic conditions, a physician who is true to himself and to the tenets of his profession, cannot hope, except under the rarest and most exceptional circumstances, to make a fortune from his medical work alone. He is not merely a diagnostician nor a therapist, nor both, but he must combine such a number of native qualities and have a training so broad that his satisfactory evolution at first sight seems well-nigh impossible.

It goes without saying that training in the

biological sciences is necessary in these days of bacteria, hematozoa, and other parasites, demanding a knowledge of the low forms of life which infect, and the higher forms which are infected and serve as hosts or carriers of disease. He must be a physicist and a biological and physical chemist if he is to understand the problems of infection and immunity, and apply them to diagnosis and prognosis in the sick or to the protection of the well. Much of therapy and diagnosis depends on a working knowledge of electricity, light, heat, and other physical subjects, and on exact knowledge of chemical reactions and affinities. He must be trained in all of the so-called medical sciences, and must, by prolonged clinical study, familiarize himself with disease. But before and beneath all this he must be a man, at once strong and gentle, or, in other words, a gentleman. The training in this regard should both antedate and run concurrently with his scholastic, collegiate, and professional training. The germ should be born in him and fostered by his home and social environment. He must be well informed on a great variety of subjects, since, in his community, the advice of no one is more sought nor on more points, many of them far remote from medicine. His chief duty will be to give advice, which may often involve change of environment, occupation, and manner of life for a whole household. To act intelligently, he must know much of social and commercial life and possibilities, in order to give advice which appeals to the moral, professional, or business sense of the patient, who may be quick to see that it is impracticable and lacking in what is so paradoxically termed "common sense." It is easily seen that the doctor of to-day must possess the combined good quality of Cæsar's wife and the Apostle Paul: he must "be above suspicion" and "all things to all men," and, at the same time, be "as wise as the serpent and as harmless as the dove."

If at times he is to sustain the weight of trouble and guide the fortunes of a family, or, in the case of epidemics, of a municipality, state, or country, he must be sound of heart and stable in all his ways. How then is this paragon to be secured? Physicians are born, not made, and though training will make a good man better, it cannot convert bad into good. With the increase in the sum total of human knowledge and the modern complexities of human activities there has been a recognized need of increased length of training for the medical profession, which has been met by one of two, or a combination of

two, methods, namely, lengthening the medical course or increasing the pre-medical training. In a number of the American university medical colleges, combination courses have been developed which grant the degree B.A. or B.S. at the end of two years' collegiate training plus the first two years' professional training in the basic medical sciences, which need be none the less scientific because they are applied. At the end of two more years the clinical training, including hospital and applied laboratory courses, the degree of M.D. is conferred. In my own university, namely, Minnesota, after a four-years' high-school course, which includes at least two years of Latin, the College of Science, Literature, and the Arts, affords a compulsory course of two years of chemistry and biology, including comparative anatomy, one year of botany, one year of higher mathematics, preparatory to a stiff year's work in physics of rather a mathematical trend, one year of rhetoric and two years of German unless this has been had previous to entrance, when one year of French may be substituted in the university. Following this, two years are devoted in the College of Medicine and Surgery to the study of human anatomy, histology, and embryology, organic chemistry, sanitary chemistry, including analysis of foods and waters, and toxicological, pharmacological, and physiological chemistry, physiology, pharmacology, materia medica, and general pathology and bacteriology, all of which consist throughout of practical laboratory work for the students with demonstrations, and only sufficient in the way of lecture work to afford the mortar with which to bed and hold together the stone of his actual practical experience in the structure of the student's education. At this point the College of Science, Literature, and the Arts of our university confers upon those who have been thus far successful, the degree of Bachelor of Science.

The next two years are devoted in the College of Medicine and Surgery to hospital, dispensary, and laboratory study of medicine, surgery, obstetrics, and the general principles at least of certain specialties, like gynecology, and diseases of the eye, ear, nose, throat, and skin; and particular attention is given to diseases of the nervous system. The truths learned in the first two years of laboratory study from the viewpoint of the structure or function of the cell, or organ, and concerning disease and disease-processes, are now applied specifically to the study of *cases* of simple or complex disease. At the end of this period the degree of M.D. is conferred by the

university. Thus the student is given a double degree.

In a number of universities, including that which I have the honor to represent, for three years of work in arts or science, or, better, arts plus science, the first year in the College of Medicine is counted as equivalent to the fourth year in the College of Arts or Science, and the degree of A.B. is given at the end of the freshman year in medicine, the degree of M. D. being conferred after three years further study in the professional branches.

Quite a number of university medical colleges are demanding at least two years of university work, unspecified in detail, however, as a preliminary to entrance into medicine. At least two of the universities of the United States require a Bachelor's degree, or the equivalent for admission into the study of medicine, and one requires three years of preliminary university or college training. It is thus seen that the authorities in this country are realizing the increased demands which society is making upon the members of the medical profession; and as progress is made, it becomes necessary to raise our ideals a notch higher. The ideal method of medical education or instruction is for a single student, or a small group of students, to be so intimately associated with an ideal physician that they learn daily and hourly, without the necessity for the development of a complicated machine whose operation is calculated to turn out the largest possible number of the best-equipped medical men. The preceptor-method of instruction may be called making doctors by hand, but in order to keep pace with modern development it has been found necessary to establish the complicated mechanism of a modern up-to-date medical college. The day of the proprietary medical school, where the members of the faculty hold stock in the company and where the success or failure of the school is dependent upon student fees, is fast drawing to a close on account of the expenditure of money necessary to install and operate the complicated machinery of a modern medical school.

The American Medical Association has seen the imperative necessity of securing greater uniformity in medical education throughout the United States. Through its Council on Medical Education it is inspecting the various medical colleges throughout the country, of which there are more than three hundred and fifty, and reporting upon them in regard to equipment, method of operation, the details of the course given,

and the standing achieved by the graduates of the various colleges before the various state medical examining boards. There can be only one result, and that is the elimination of the weaker schools and the survival of those which are integral parts of universities with adequate financial backing, either of the state or of a generous endowment.

Harvard University, the University of Minnesota, and perhaps certain other teaching bodies have adopted what is termed the concentration method of teaching, whereby students are given concentrated instruction, which occupies their whole time in not more than one or two branches at once. For instance, in Minnesota, the first half of the freshman year is devoted entirely to anatomy, histology, and embryology, the second half of the year being equally divided between physiology and chemistry. In the second year the first of the year is equally divided between physiology and physiological chemistry, on the one hand, and chemistry on the other, although for the future, pharmacology is planned to fit in at this point. During the second half of the second year, for the first nine weeks the whole time is given to anatomy, histology, and embryology; and the last period of nine weeks is devoted entirely to general pathology and bacteriology, where a general survey of these two subjects is given in special relation to methods, the biology and chemistry of bacteria, and a systematic study of disease-processes.

The last two years of the course in medicine at the University of Minnesota are not so concentrated. In a previous paper I advanced my reasons for believing that still greater concentration is needed; and, to outline in brief, a more ideal medical course I would suggest the following:

1. A thorough, broad, and accurate high-school course in which too much latitude in the selection of subjects is not permitted. This should include the humanities, a thorough knowledge of mathematics, and certain of the sciences, of which chemistry should be one.

2. At least two years of university work should be given in preparation for medicine. In addition to biology, chemistry, mathematics, physics, rhetoric, and French or German, a thorough course in logic should be demanded after a training in accuracy, such as may be had from a study of mathematics, physics, and physical chemistry. Ethics should be taught in the university, and manners and morals in the home; something concerning economics and the duties of citizenship

or civics should be inculcated; and psychology should be given either here or preferably later after a sound basis has been laid in physiology.

3. Instruction in the so-called medical sciences by the concentration system can be secured by the devotion of the whole time of the student for a few weeks to the study of the general principles of, and methods used in, anatomy, histology, and embryology, which could then be followed by similar instruction in physiology and physiological chemistry. Following this the study of organology should be systematically taken up, and the gross anatomy, histology, and development and the physiology of a particular group of organs and tissues should be taught at approximately the same time, so that the organ or system is viewed and approached from all sides, and not seen in half lights at odd times with the result that relationships are not properly understood and appreciated. Following this should be concentration on the study of bacteriology, so that a student may come to know what bacteria are, and follow them throughout their whole life-histories, in a general way, and thus to gain an understanding of bacteriological and biological chemistry, involving toxin-production and methods of the reproduction of bacteria and also of eradicating them. This involves a thorough study of all of the methods used in bacteriology, and is largely a study in methodology. Concurrently with or immediately following this, a study of the disease process is demanded in general pathology, so that such general subjects as inflammation with its intrinsic cytological, hematological, vascular, nervous, and other phenomena may be noted. Metastasis, infection, degenerations, tumor formations, etc., should here be inculcated. At the same time, and for the purpose of rest from too great concentration, practical pharmacology and physical diagnosis and methods might be studied although these must be taken up again later.

4. The last two years of applied medicine should also be on the concentration basis, and without going into detail the following principles may be stated:

After a general survey of the subject has been obtained, specific diseases should be studied from all sides at once: e. g., tuberculosis, which is of such commercial, economic, and medical importance, might be approached somewhat after this manner: The students in the laboratory of pathology and bacteriology should be taught by actual experience the life-history of bacillus tuberculosis in artificial culture-media and in various

animals where they learn how to identify it when found, how to demonstrate it in all the various tissues, organs, and fluids where it may be found, and how it may be circumvented by the application of diagnostic, therapeutic, and protective measures logically deduced from their own observations. This, of course, necessitates the study of the disease-process of tuberculosis, methods of infection, the atria by which the bacillus gains entrance, and the channels by which it is eliminated and spread. By gross and microscopic study from preserved and fresh material, the tubercle bacillus should be followed throughout the body. It is illogical to take up special pathology from the point of view of the organs and to study one week, under diseases of the lungs, pulmonary tuberculosis, following this, in five or six weeks, by a study of tuberculosis of the spleen or liver when these organs are reached in the ordinary course of events. Immediately following the instruction in pathology and bacteriology should come instruction by the chair of medicine, supplemented by clinics in which tuberculosis is shown and studied in all its multitudinous manifestations. The surgeon and the surgical pathologist should give instruction on tuberculosis as presented to them; the gynecologist and obstetrician should touch tuberculosis as it affects their work; and so throughout the various branches until this disease has been approached through all avenues. Only by such a method can an adequate view of the whole subject be obtained by students who at best are hazy in their notions of the actual relationships of the various bits of instruction culled from different sources. It is a harmonious whole that is desired.

Following instruction in tuberculosis, the typhoid group could be covered, or the pus-infections and septicemias, including pneumonia, and so on until all of the commoner diseases had come to be recognized from a thorough and systematic study along all of the vital lines. Thus, instruction would be built on the solid ground of etiology, which is, after all, logical. The plan premises that the medical college is for the teaching of medicine, and that the instructing force is essentially and primarily engaged in the teaching of medicine combined—and this is very important—with research in the various clinical and laboratory lines. This cuts out very largely consulting work, and practical work must be chiefly confined to the college hospital and laboratory which is, after all, to be desired since the benefit

of the patient and of the student is the main consideration.

Perhaps there is too great a tendency to magnify and glorify the importance of the laboratory and of laboratory instruction. This is a natural reaction that succeeded the old days of what was called "practical study,"—as if the other were impractical,—included under which were anatomy, normal and abnormal, and the study of the patient based on the utilization of the unaided senses. It is to be deplored if the application of the delicate, oftentimes too delicate, methods of physics and chemistry involved in the laboratory study are to supersede careful scrutiny of the patient at the bedside. The chemical laboratory, the hematocrit, the hemacytometer, the microscope, animal inoculations, and other laboratory apparatus and procedures are, after all, only warranted in the pursuit of knowledge into channels where the unaided senses cannot follow, and for the verification of clinical observations. The utilization of methods that are too delicate, only magnifies error when error is encountered; and findings based on only the finer laboratory technic which cannot be made to harmonize with those acquired by clinical study, are not tenable, and they indicate that a mistake has been made. I have before decried the abandonment of care and accuracy in the use of what may be termed the coarser methods of our fathers for the delicate technic which often, on account of its delicacy, is inapplicable as a primary means of study. With your permission, I should like to incorporate at this time a brief portion of a former paper on "The Correlation of Medical Teaching," since it deals with certain difficulties which might, at first sight, appear too great to warrant the trouble of trying to meet them:

The "case-method" of instruction is most important and should be included in such a general scheme as has been outlined, so that in the final two years the patient is the center of teaching and study. No individual case, however, is able to afford complete instruction on all the phases of medicine, and it will become necessary, therefore, to systematize certain wards or parts of the hospitals for this plan of teaching and research.

The main difficulties which such a plan suggests are the facts that one particular department may have a tremendous amount of work thrust upon it for a given period of time, and for some time thereafter may have little to do, while other phases of the particular subject are being presented by other teachers. Such time can be utilized in preparation for the next installment of work. Difficulties, too, in securing clinical material for illustration and study may be encountered, but these can be met by

proper systemization. In Cambridge, England, there is a plan under consideration of which, as yet, no details have been published. This has for its object the forwarding of specially selected cases to Cambridge by skilled observers throughout the whole of Britain who are in sympathy with the project and are members of this Medical Research Society. A complete bibliography is compiled, including all phases of the particular disease which it is desired to study at that time. This bibliography is at the disposal of each member of the society, and through a central office each one of the members throughout the country is to be kept in constant touch with the work and is to furnish suitable cases to this central hospital as opportunity arises. The hospital is in direct relationship with the Cambridge laboratories, where concurrent chemic, bacteriologic, and pathologic studies of blood and various secretions, excretions, tissues, cells, and body-fluids may be carried on.

A somewhat similar plan of co-operation with the alumni of any university would permit of the study of cases in series and could be utilized for undergraduate teaching. The study of typhoid fever or pneumonia offers no difficulties, since instruction in these diseases could be arranged for at the time of year when they may naturally be expected. This is true also of scarlet fever and diphtheria. The pus-infections and tuberculosis may be studied at any time, since it is always possible to secure material, and the rarer infectious diseases could be studied by keeping in touch with enthusiastic alumni or studious medical men in the neighborhood of the medical school. Even small hospitals could be made to serve the purpose if due selection of cases were exercised and the central office were sufficiently well organized to keep in constant touch with energetic practitioners who might reasonably expect to be furnished with a complete record of the clinical histories, laboratory findings, course of treatment, and results obtained. While it must be admitted that it would be impossible to study all of the diseases in relationship to their etiology, it should be done so far as possible, and the fullest correlation between the various instructors should be maintained, so that full and complete information concerning the selected disease or process may be received from all of the sources at approximately the same time, in order that the total accumulated information may be filed at once, both in the mental compartment and written record.

It is probable that the teaching of to-day is too diversified and that attempt is made to cover too much ground. At best, the student can be taught only certain general principles and how to observe. It is, therefore, best to illustrate the methods of observation by the thorough study of a few disease-processes rather than to attempt to cover the whole field of medicine. If he be properly taught how to approach his cases in a systematic way and to utilize every method of observation, the student's only difficulty will be to weigh the evidences which his eyes, ears, hands, microscope, or chemic tests afford him. If he is able to diagnose accurately the commoner disease-processes and the changes which have been produced in the various tissues and organs

of the body, if he knows the general principles of therapy and is taught to advise his patient and to protect others with whom he may be brought in contact, he can easily adapt the same methods to the study of other processes and other diseases when the necessity for it arises. Such a general plan of teaching will eliminate the dangers of too great specialization, whether along laboratory or clinical lines, and will promote the use of logical methods of deduction and neutralize the present tendency to "cock-sureness," with the possible oversight of important associated or causative conditions.

Where so much is at stake, no effort should be spared, and we should not close our eyes to the present difficulties and dangers. At best, the machine must be complicated, but it may be made to work with smoothness and regularity if molded upon the lines of modern business enterprise. In any event, the public has a right to expect that medicine, the most important of all the professions, shall be taught as carefully and systematically as engineering or other technical work.

We cannot close our eyes to the complications which confront us. We must keep pace with, in fact, we should keep far ahead of, modern development. To our shame we must confess that, in certain matters of public health and public utility, certain of the profession have to be pushed into their proper places by public opinion. This is true of the movement for the control and eradication of tuberculosis. The medical man has too long supposed that all commercial and economic problems were possible of description in medical terms and capable of being solved by medical methods, and is not apt, in his conservation, in applying methods and facts gleaned from other walks of life. There are many things, too, in medicine which are relics of the times when the bellows, the crystal glass, the touchstone, the crocodile skin, and other emblems of chicanery and deceit, were thought to be necessary. Perfect honesty and candor are necessary, and if the medical man is not of sufficient stature to be able to convince the patients and the public of the logic of his deductions and recommendations he is not fit to practice medicine, nor can he hope to merit the confidence of the people. Medical men are often selfish in that they assume to know a great many things which they do not know. In matters of public health, physicians have been slow to admit that they know relatively little of matters which concern other sciences and professions, perhaps, as much as their own. Engineering, actuarial, sociological, economic, and commercial phases have to be met and a working and practical knowledge of biology, chemistry, and law are necessary. I am mentioning these matters only to show that no amount of training

along lines too specialized will make a physician large enough to meet the demands made upon him, if, in the first place, he is not strong in character and absolutely honest and fearless, in fact, so devoid of fear that he is willing and anxious to let the people know his limitations of knowledge *as well as* of his responsibility? He must, in order to take his place in society, be prepared to articulate properly with other forces.

We of this college and university are, perhaps, not appreciative enough of the opportunities which have been afforded us for the study of disease. I know of no place where the clinical opportunities are greater, and am proud to say that very few, if any, schools have been able to utilize them to greater advantage. The development of the school has been logical, where, upon the elementary and basic medical-school center, namely, the hospital, has been laid the superstructure of the finer laboratory methods, as they have been evolved, tested, and found applicable to medicine. Manitoba is not wanting in progress. We must remember that the honor of our Alma Mater is in our hands; that she is to be judged by her sons and what they accomplish in the world into which they are sent.

We are glad to realize that we number amongst the medical profession many of great literary attainment, and that one of our number, a fellow countryman, has been good enough to depict for us, in the homely language of the French Canadian habitant, a doctor of a type that we should all be glad to imitate, since he realized his duty to his neighbor, which is not only a privilege but a divine command. He has to content himself with meeting the real difficulties and responsibilities of life whilst striving always for the ideal.

"But Dr. Fiset, not moche bonne he get,
Drivin' all over de whole contree.
If de road she's bad, if de road she's good,
When ev'ryt'ing's drown on de Spring-tam flood
An' workin' for not'ing half tam' mebbe!"

Perhaps not many of us have been drawn into medicine from strictly humanitarian or religious motives, but whoever of us is in medicine and has not learned to love his work should withdraw, for surely there are lines which are sufficiently diverse to meet the requirements of almost any temperament. There is a niche for each of us if he is willing to seek it. Being in the work—one may call it *the* work—of the world, there should be only one motive; and our primary motive in regard to recompense for our work should be the privilege of doing it. Kipling must have had in mind the physician when he wrote

"l'Envoi," although through a typographical error the artist may claim the benefit. If we have to be content, like Dr. Fiset with the real, during life, we may at least hope to attain the ideal.

And only the Master shall praise us,
And only the Master shall blame;
And no one shall work for money and
No one shall work for fame;
But each for the joy of the working,
And each in his separate star,
Shall draw the Thing as he sees it
For the God of Things as They are.

BOOK NOTICES

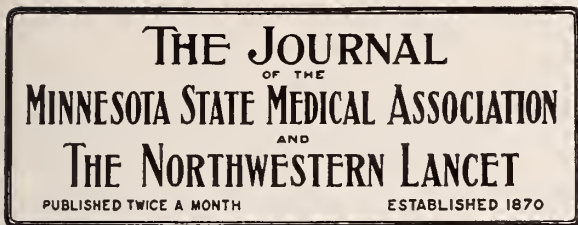
Alcohol: The Sanction for its Use, Scientifically Established and Popularly Expounded by a Physiologist. Translated from the German of Dr. J. Starke. Cloth. Pp. 317. New York and London: G. P. Putnam's Sons, 1907.

In this book we find another contribution to the controversy concerning the effect of alcohol in health and disease. Though written as a popular treatise, the ground is fully covered and considerable attention is given to the scientific phase of the subject, as well as to popular opinion and observation.

The author very frankly takes up the cause of alcohol and endeavors to prove, by arguments not altogether well established, that alcohol is at present laboring under an undeserved stigma; for instance, he insists that "the moderate use of alcohol has nothing to do with drunkenness" and that "it is easy for any healthy human being to restrict his use of alcohol within the bounds of moderation." He also argues that the moderate use of alcohol has nothing to do with the development of any disease whatever; and, that, on the contrary, it is for many men an important hygienic measure.

As a whole, the conclusions of the book, radical as they are, will hardly be accepted by the general public, but the effort of the author to show that alcohol has but little relation to disease will doubtless arouse discussion and perhaps help to place the physiologic and pathologic action of alcohol on a better basis.

If a patient persists in running evening temperatures which cannot be accounted for after a thorough physical examination and blood examination, one should place the patient on increasing doses of the iodides, for the fever may be due to an old syphilitic infection.—American Journal of Surgery.



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JUNE 15, 1908

FAKE MEDICAL ADVERTISEMENTS

The Associated Charities of Minneapolis has been very active in ferreting out fraudulent and illegitimate quacks and institutions; and in their endeavor to interest the public in the matter they have addressed a letter to the three papers published in Minneapolis, asking them to exclude and eliminate from their columns all quack advertisements.

The only paper that has openly announced its determination to comply with this modest request is The Daily News. So far, The Evening Journal and The Tribune have not responded, but it is to be hoped that, after the letter has been carefully digested, and particularly after having read the signatures of twenty-five business men of Minneapolis attached to the request, they, too, will join The News in the suppression of these fraudulent advertisements.

The fact of the matter is, so many people are imposed upon, their money confiscated, and they themselves turned over to the city or the Associated Charities to care for, some radical means must be adopted to insure protection to these unfortunate people.

Melvin C. Gates, who is an alleged doctor, and who runs a so-called sanitarium, has been in-

dicted by the grand jury for taking money and promising cures where it was evident that no cure could be expected. The physicians have purposely kept out of the fight for good reasons, but every physician should make an effort to inform his patients and friends that the institutions which advertise cures are usually fraudulent and managed by quacks; that the one aim and object of their existence is to get money in any way that they possibly can; that their promises are absolutely worthless; and that their methods of cure are unscientific, illegal, and unjustifiable.

The suppression of quack advertising in other cities has been very successful, and there is no reason why Minneapolis should not stand well in the front now that the attack is well begun. THE JOURNAL-LANCET will do all it can to further and help the suppression of quackery, and it hopes that its readers will take an equal interest.

THE AMERICAN MEDICAL ASSOCIATION MEETING

The recent gathering of doctors at Chicago to celebrate the fifty-ninth annual meeting of the A. M. A. was, in point of attendance, greater than ever before. The weather was glorious, and everyone seemed to accept the situation, whatever it was. The physicians of Chicago deserve all credit for the success of the meeting. The entertainment of more than 6,500 doctors, with their families and friends, means an enormous amount of preparatory work. Various committees, and the individuals who composed the committees, were tireless in their efforts for months before and every moment during the meeting.

The opening session at the Auditorium proper was an inspiring sight, and the president, Dr. Burrell, showed his high-minded qualities by a short and popular address.

The Section meetings, which were held in various parts of the city, were well attended, and much good resulted therefrom.

The first Section to begin their work, Saturday, May 30th, was the American Medical Editors' Association, which continued its session on Monday. The proceedings were marked by high-minded papers, and there was a distinct absence of wrangling, bickering, and fault-finding. The Association seemed to have settled down into a peaceful gathering, and, doubtless, the effort of medical journalism will be greatly benefited.

The Gastro-enterological Society, which met on Monday, was attended by specialists who are particularly interested in this line of work.

The members of the larger Sections, like that of Surgery and Medicine, presented the usual papers, and discussed the usual topics that are of such vital interest to the surgeon and the physician. Of course, no meeting could possibly be held by the surgical section without vigorous discussion of appendicitis, from all its points of view. The usual differences of opinion were in evidence, but, so far as one is able to judge, each man clung to his own ideas. The result is that patients will be operated upon for appendicitis early in the disease, between attacks, and long afterward.

The Section of Ophthalmology and one of the large Sections of the A. M. A. combined their work on Thursday afternoon. At the Section on Neurology the subject for discussion was optic atrophy, brain tumors, and decompression operations, and the effect of such operations on changes in the eye-ground. This meeting was particularly interesting and the proceedings should be widely read.

The Section on Neurology was delightfully entertained and instructed by Dr. Beevor, a London neurologist. His paper was on a very simple subject,—that of single muscular movements and their relation to the central nervous system; and it was presented so clearly that everyone was delighted, and wondered why the subject had not been taken up before. His address showed the necessity of observing simple things rather than complex states, and it illustrated the benefits that may come from such careful and detailed observations.

Dr. Jensen, the noted oculist from Germany, was the center of attraction, and gave a very interesting clinic.

Dr. Martin, the celebrated gynecologist from Berlin, was an imposing man, and did much to make the Section which he attended a very instructive one.

The social side of the American Medical Association showed the generous hospitality of the Chicago men. Everything that was possible was provided for the visiting guests. Luncheons and dinners were given with a lavish hand. On Tuesday evening, the opening day of the session, Section dinners and Alumni banquets were held in various hotels and clubs. On that evening it was said there were twenty-nine banquets, and all were well attended. The doctor, like most other carnivorous animals, delights in good food; and, seemingly, nothing so detracts from the path of medicine as does a good dinner and good companionship with his fellow man.

Dr. Gorgas, of the Isthmian Panama Canal,

was elected president of the Association for the next year. There was very little politics in the House of Delegates, and everything went off smoothly. No lives were lost in the struggle for office, and no hard feelings were entertained after the elections were over.

The American Medical Association is getting to be a great factor in medicine, and the time will eventually come when it will have a representative in the Cabinet.

DR. JACOB E. SCHADLE

Dr. Jacob E. Schadle, of St. Paul, died on May 29th, at the age of 59. Dr. Schadle was born in Pennsylvania, and graduated at Jefferson Medical College, Philadelphia.

Very early in his practice he demonstrated that he was a man of force by the energy with which he handled an epidemic of smallpox. In 1885 he successfully treated three cases of mushroom poisoning by the use of atropine, which had not hitherto been used for this purpose. While traveling in Palestine, he made a special study of leprosy, and wrote an article upon the subject which attracted much attention.

But Dr. Schadle is best known by his original work in his specialty, diseases of the nose and throat. He has written many papers upon the various phases of his work, and they have always attracted general attention, both in this country and in Europe. Of late years he has made a special study of hay-fever, and had he lived a few years longer his investigations might have demonstrated the etiology of the disease, and perhaps have pointed out a preventive and possibly a cure for it.

Dr. Schadle occupied a much larger place in the social and public life of his city than is often given to a medical man to fill.

REPORTS OF SOCIETIES

STEARNS-BENTON SOCIETY

The Society held a meeting at St. Cloud on May 21st with ten members present.

Papers were read as follows:

"Educational Standards," by Dr. J. M. McMasters; "Anesthetics and Anesthesia," by Dr. G. E. Putney; "Surgical Treatment of Cancer of the Stomach," by Dr. C. B. Lewis; "Correlation of Diseases of the Stomach to Other Organs," by Dr. J. C. Boehm. A spirited discussion followed,

and the papers were thoroughly appreciated.

J. C. BOEHM, M. D., Secretary.

WASHINGTON COUNTY SOCIETY

A meeting of the Society was held at Stillwater on March 27th to consider sanitation with reference to meat and milk, and was open to the public. While the meeting was under the auspices of the County Medical Society, it was addressed by veterinarians. Papers were read as follows: "Tuberculosis in Cattle," by Dr. M. S. Whitcomb of the State Live Stock Sanitary Board, St. Paul; "Milk as Affected by Stable Practices and Subsequent Handling," by Dr. M. H. Reynolds, also a member of the Board and veterinarian at the Experimental Station, St. Anthony Park.

The tuberculosis exhibit, gotten up by the State Board of Health under the direction of Mr. Christopher Easton, made its first appearance at Stillwater and was held on May 4-8. The local arrangements were not under the auspices of the Medical Society, but of a specially organized committee, consisting of some medical men and a number of representative laymen, as it was thought that a greater public interest in the tuberculosis problem would be created in this way. Nearly 2,000 persons visited this exhibition, and the committee were well pleased with the interest shown. The hall was open for the inspection from 10 a. m. to 10 p. m. Special addresses were delivered at 4 and 8 p. m. from Monday evening to Friday evening. The subjects and speakers were as follows: Opening address, Mayor J. H. Armson, Stillwater; "Responsibility of the State and the State Board of Health's Part in the Crusade," Dr. H. M. Bracken, St. Paul; "Meat as a Source of Tuberculous Infection," Dr. H. N. Mead, Stillwater; "Cow's Milk as a Source of Infection, with Special Reference to Tuberculosis," Dr. M. H. Reynolds, St. Anthony Park; "A State-wide Antituberculosis Movement and What It Means," Dr. T. C. Clark, Stillwater; "Social and Economic Aspects of Tuberculosis," Mr. Christopher Easton, St. Paul; "Sanatorium Treatment of Tuberculosis," Dr. H. L. Taylor, St. Paul; "Care of the Consumptive in the Home," Dr. J. W. Bell, Minneapolis; "Modes of Infection, with Suggestions for Their Prevention," Dr. H. A. Tomlinson, St. Peter; "Predisposing Causes of Tuberculosis," Dr. W. R. Humphrey, Stillwater; "Responsibility of the Public in the Crusade," Rev. C. E. Benson, Stillwater; "Importance of Early Diagnosis," Dr. C. L. Greene, St. Paul.

F. G. LANDEEN, M. D., Secretary.

HOUSTON-FILLMORE SOCIETY

The Society met at Spring Valley on May 21st, with 12 members present.

The following papers were read:

"Natural Free Respiration," by Dr. J. A. L. Bradfield, La Crosse, Wis.; "The Legal Side of Medicine," by Dr. W. S. Beck, Indianapolis, Ind., and "Report of Case of Extreme Hydramnion," by Dr. J. T. Dunn, Wykoff, Minn.

Great interest was shown in the topics presented, as was evidenced by the discussion and questions which followed.

The next meeting will be held in October at Harmony.

O. F. FISCHER, M. D., Secretary.

ABERDEEN (S. D.) DISTRICT SOCIETY

The Aberdeen District Society met in the Commercial Club parlors on the evening of May 19th. Among those attending were Drs. Herbert W. Jones of Minneapolis, Frieburg of Wattertown, Barber of Edgely, Merchant of Ellendale, Kutnewsky of Redfield, Herman of Conde, Kern of Roscoe, Shockey of Pollock, and a large representation from Aberdeen. Interesting cases were reported by Drs. Kern, McCauley, and Clemmons.

Dr. Herbert W. Jones read a paper on "Indications for Craniotomy," presenting with it pathologic brains and photographs to illustrate the subject, and created a good deal of interest. The paper was freely discussed by nearly every physician present, and Dr. Jones was thanked by the Society for his efforts in their behalf.

After the business session all adjourned to Ward's restaurant, where lunch and anecdotes were dispensed until a late hour.

M. C. JOHNSTON, M. D., Secretary.

NEWS ITEMS

Dr. S. J. Cheleen, of Hutchinson, has moved to Lindstrom.

Dr. E. G. Harper has moved from Litchfield to Mountain Lake.

Dr. O. H. Clark, of Lincoln, Neb., will locate at Arlington, S. D.

Dr. Ludwig Lima, of Montevideo, has returned from his European trip.

Dr. Ignatius Donnelly, who has been practicing at Mankato, has moved to St. Paul.

Dr. Leo O. Chilton, of Howard Lake, has gone to Portland, Oregon, where he will locate.

Dr. P. D. Winship, of Park Rapids, will be a doctor in politics this year. He will run for the legislature.

Dr. Eugene G. Murphy, who has been assistant to Dr. A. B. Ancker, City Physician of St. Paul, has been appointed deputy coroner for the city.

Drs. A. A. and Josephine Tofte, who recently sold their practice at Ruthton, to Dr. Carl Sherer, of New Ulm, have located temporarily at Lindstrom.

The druggists of Minneapolis entertained a number of physicians at a banquet last month, when the relations between the druggists and the physicians were discussed at length by druggists and physicians.

Dr. Jacob E. Schadle, of St. Paul, died on May 29th, at the age of 59. Further notice of Dr. Schadle's life and work will be found in another column of this issue.

A notable wedding occurred last month at Rochester, when Dr. George Kessel, of Cresco, Iowa, took from the medical profession Miss Alice Magaw, who has made a world-wide reputation as an anesthetist. The wedding occurred at the residence of Dr. and Mrs. William J. Mayo, and was beautiful in all of its appointments. Dr. and Mrs. Kessel will spend three months in Europe, returning to Cresco, Iowa, on Sept. 15th.

PARTNER WANTED

A man who will be satisfied with honest work and a fair income, Norwegian preferred. Address G. M., care of this office.

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An unopposed practice in a town of 400 people; good office-fittings, team, buggy, harness, sleigh, and all equipments at a bargain. For particulars address S. B., care of this office.

FOR SALE

My practice, office fixtures, and driving outfit. Only physician in a town of 500 in Central Minnesota. Good territory, Americans and Germans. Want to take post-graduate work. Address G. B., care of this office.

FOR SALE

A decided bargain in a second-hand x-ray outfit. Owing to a partnership we have two x-ray outfits and will sell one at a bargain. Outfit includes a Tesla high-frequency coil (for incandescent or alternating current), fluoroscope, and tube-stand. Price only \$25.00 if taken at once. First cost \$125.00. Address M. W., care of this office.

PRACTICE FOR SALE

I have an offer to go in with a big mining company as surgeon, and will sell all or part of a \$6,000 to \$7,000 cash practice and well-equipped hospital, with transferable contracts. Easy practice, easy money, lots of surgery. Small cash payment, and all the time you need. City of 8,000 in northern Minnesota. Act quickly. Address, S. C., care of this office.

PHYSICIANS' ATTENTION.—Drug-stores on easy payments, etc. Drug-store positions, United States or Canada. F. V. Kniest, Omaha, Nebr.

REPORTED FROM STATE INSTITUTIONS FOR MONTH OF JANUARY, 1908

STATE INSTITUTIONS.	Total Deaths of												
	Tuberculosis of Lungs	Other Forms of Tuberculosis	Pneumonia	Bronchitis	Diphtheria	Scarlet Fever	Measles	Smallpox	Whooping Cough	Cerebrospinal Meningitis	Typhoid Fever	Diarrheal Diseases of Children	Puerperal Septicemia
Fergus Falls, Hospital for Insane.....	12	1	2										
Rochester, Hospital for Insane.....	4												
St. Peter, Hospital for Insane.....	6	1	1					1			1		
Anoka, Asylum.....	2												
Hastings, Asylum.....	0												
Faribault, School for Deaf.....	0												
Faribault, School for Blind.....	0												
Faribault, School for Feeble Minded.....	0												
Owatonna, School for Dependents.....	4												
Stillwater, State Prison.....	0												
St. Cloud, State Reformatory.....	0												
Red Wing, State Training School.....	0												
Minneapolis, Soldiers' Home.....	4												
Totals.....	32	4	3					1			1		

•No. Report Received

REPORTED FROM 72 CITIES HAVING A POPULATION OF 1,000 OR UPWARDS
FOR THE MONTH OF JANUARY, 1908

CITIES	Population of U. S. Census of 1900	Population of State Census of 1905	Total Deaths	Tuberculosis of Lungs	Other Forms of Tuberculosis	Pneumonia	Bronchitis	Diphtheria	Scarlet Fever	Measles	Smallpox	Whooping Cough	Cerebrospinal Meningitis	Typhoid Fever	Diarrheal Dis- eases of Child- ren	Puerperal Septicemia	Cancer
Albert Lea.....	4,500	5,657	5			1											1
Anoka.....	3,769	4,053	6	2													1
Austin.....	5,474	6,489	12	1	1												1
Barnesville.....	1,326	1,566	*														
Bemidji.....	2,183	3,800	10	1		2		1						1		1	1
Blue Earth.....	2,900	2,364	3														
Brainerd.....	7,524	8,134	15			2											
Chaska.....	2,165	2,085	*									1		3	2		
Chatfield.....	1,426	1,300	*														
Cloquet.....	3,074	6,117	11			5											1
Crookston.....	5,359	6,794	5	1	1	1	1										2
Detroit.....	2,060	2,149	9	1	3												2
Duluth.....	52,968	64,942	91	6	18	2	6		1				1	3	2	2	2
E. Grand Forks.....	2,077	2,489	2														
Ely.....	3,712	4,045	5														
Eveleth.....	2,752	5,332	6			1		1									
Faribault.....	7,868	8,279	12	2	2												1
Fairmont.....	3,440	2,955	2	1	1												
Fergus Falls.....	6,072	6,692	6	1		1											
Granite Falls.....	1,214	1,340	*														
Hastings.....	3,811	3,810	7	1		2	1							1			
Hutchinson.....	2,495	2,489	1														
Jordan.....	1,270	1,311	1														
Lake City.....	2,744	2,877	2	1													
Litchfield.....	2,280	2,415	0														
Little Falls.....	5,774	5,856	4			1									1		
Luverne.....	2,223	2,272	3			1											1
Le Sueur.....	1,937	1,842	2			1											
Madison.....	1,336	1,604	0														
Mankato.....	10,559	10,996	14	1	1				1								1
Marshall.....	2,088	2,243	2														
Melrose.....	1,768	2,151	1														1
Minneapolis.....	202,718	261,974	321	29	4	84	2	1	3	3			1	5	3		15
Montgomery.....	979	1,281	2														
Montevideo.....	2,146	2,595	4	1		1							1				
Moorhead.....	3,730	4,794	10	1		1		1					1	1		1	
Morris.....	1,934	2,003	*														
New Prague.....	1,228	1,419	0														
New Ulm.....	5,403	5,720	5														
Northfield.....	3,210	3,438	10			3											
Ortonville.....	1,247	1,612	4	1		1											1
Owatonna.....	5,561	5,651	6			1								1			1
Pipestone.....	2,536	2,885	3														
Red Lake Falls.....	1,885	1,797	1	1													
Red Wing.....	7,525	8,149	12	1		1											1
Redwood Falls.....	1,661	1,806	2			1											
Renville.....	1,075	1,229	0														
Rochester.....	6,843	7,233	25	2		4											4
Rushford.....	1,100	1,133	1														
St. Charles.....	1,304	1,238	2														
St. Cloud.....	8,663	9,422	14			1		1									
St. James.....	2,607	2,320	4		2												
St. Paul.....	163,632	197,323	218	23	6	28	6	2	1		1	1	1	6	4	1	18
St. Peter.....	4,302	4,514	2			2											
Sauk Centre.....	2,220	2,463	5														
Shakopee.....	2,046	2,069	5	2		1	1										
Sleepy Eye.....	2,046	2,312	1														
So. St. Paul.....	2,322	3,458	6	3													
Stillwater.....	12,318	12,435	18	3		2			1								2
Thief River Falls.....	1,819	3,502	4	1		2											
Tower.....	1,366	1,340	*														
Tracy.....	1,911	2,015	5			1											
Virginia.....	2,962	6,056	10	1		3		1									
Wabasha.....	2,528	2,619	5			1		1									1
Warren.....	1,276	1,640	4			2											1
Waseca.....	3,103	2,838	3			2											
Waterville.....	1,260	1,383	2														
West St. Paul.....	1,830	2,100	1														
Willmar.....	3,409	4,040	3			1	1										
Windom.....	1,944	1,884	3			1									2		
Winona.....	19,714	20,334	27	4		2	1										4
Worthington.....	2,386	2,276	2														

*No report received Health officer not doing his duty

REPORTED FROM 65 VILLAGES HAVING A POPULATION OF 1,000 OR UPWARD
FOR THE MONTH OF JANUARY, 1908

VILLAGES	Population of U. S. Census of 1900	Population of State Census of 1905	Total Deaths	Tuberculosis of Lungs	Other Forms of Tuberculosis	Pneumonia	Bronchitis	Diphtheria	Scarlet Fever	Measles	Smallpox	Whooping Cough	Cerebrospinal Meningitis	Typhoid Fever	Diarrheal Dis- eases of Children	Puerperal	Septicemia	Cancer
Ada.....	1,253	1,515	1	1														
Adrian.....	1,258	1,184	1															
Aitkin.....	1,719	1,896	2															
Akeley.....		1,636	1	1														
Alexandria.....	2,681	3,051	2															
Appleton.....	1,184	1,321	1	1														
Belle Plaine.....	1,121	1,301	2															
Benson.....	1,525	1,766	1															
Breckenridge.....	1,282	1,850	6															
Buffalo.....	1,040	1,124	0															
Caledonia.....	1,175	1,405	4															
Canby.....	1,100	1,505	0															
Cannon Falls.....	1,239	1,460	1															
Cass Lake.....	546	1,062	0															
Chisholm.....		4,231	10															
Clason.....	962	1,056	2															
Delano.....	967	1,023	3															
Fosston.....	864	1,000	2															
Frazee.....	1,000	1,146	1															
Glencoe.....	1,780	1,805	2															
Glenwood.....	1,116	1,718	*															
Graceville.....	856	1,032	1															
Grand Rapids.....	1,428	2,055	7															
Hallock.....	805	1,014	1															
Hibbing.....	2,481	6,566	17	1														
Jackson.....	1,756	1,776	4															
Janesville.....	1,254	1,205	0															
Kasson.....	1,112	1,049	2															
Kenyon.....	1,202	1,252	1	1														
Lake Crystal.....	1,215	1,231	3	1														
Lanesboro.....	1,102	1,041	4															
Long Prairie.....	1,385	1,256	1															
Madelia.....	1,272	1,290	2															
Milaca.....	1,204	1,319	1															
Mountain Lake.....	959	1,063	7	1														
North Mankato.....	939	1,129	4	1														
North St. Paul.....	1,110	1,400	0															
Olivia.....	970	1,019	0															
Osakis.....	917	1,056	3															
Park Rapids.....	1,313	1,719	1															
Pelican Rapids.....	1,033	1,095	0															
Perham.....	1,182	1,366	*															
Pine City.....	993	1,092	0															
Plainview.....	1,038	1,140	2															
Preston.....	1,278	1,320	1															
Princeton.....	1,319	1,704	*															
Rush City.....	987	1,041	1															
Rushford.....	1,062	1,040	4	1														
St. Louis Park.....	1,325	1,491	0															
Sandstone.....	1,189	1,589	1															
Sauk Rapids.....	1,391	1,552	2	1														
Scanlon.....		1,122	2															
South Stillwater.....	1,422	1,572	0															
Springfield.....	1,511	1,546	1															
Spring Valley.....	1,770	1,573	*															
Staples.....	1,504	2,163	7															
Two Harbors.....	3,278	4,402	11	2														
Wadena.....	1,520	1,868	0															
Wells.....	2,017	1,814	2															
West Minneapolis.....	2,250	2,530	1															
Wheaton.....	1,132	1,346	0															
White Bear Lake.....	1,288	1,724	2	1														
Winnebago City.....	1,816	1,553	5															
Winthrop.....	813	1,031	2															
Zumbrota.....	1,119	1,129	0															
State Institutions.....			32	4		3												
Other parts of State.....	1,012,328	1,085,886	696	66	6	159	19	28	3	3	1	1	2	10	5	2	47	
Total for State.....	1,751,395	1,979,658	1869	175	19	374	35	46	9	9	3	4	7	37	22	7	115	

Still births and premature births, 87 (not included in above totals).

*No report received Health officer not doing his duty

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THE VALUE OF SONDERN'S DIFFERENTIAL LEUCOCYTE RESISTANCE-LINE IN THE DIAGNOSIS AND PROGNOSIS OF ACUTE APPENDICITIS*

BY L. B. WILSON, M. D.

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In the early days of leucocyte counting, many hailed the method as giving most valuable information concerning the condition of the patient's resistance in acute appendicitis. It was soon found, however, that the problem was not nearly so simple as, on the face, it appeared, the mere increase of leucocytes being present in a variety of conditions. When differential counts began to be made, the interpretation of the results became even more difficult—so much so that many observers were inclined to throw aside the whole method as furnishing only unreliable data.

We owe to Prof. Frederick E. Sondern¹, of New York, a suggestion which, it seems, may clear up some of the troubles in the determination of the patient's resistance in acute appendicitis by means of the differential leucocyte count.

Acting on Sondern's hypothesis, Dr. C. L. Gibson² compiled the results in about 200 cases in which the blood-examinations were made by Prof. F. C. Wood, of the Pathological Laboratory, St. Luke's Hospital, New York.

While our data were being analyzed, Dr. Noehren³, an interne at the German Hospital, New York, published data from 52 cases of acute appendicitis, in which both a leucocyte count and an estimate of the polynuclear percentage were made.

As a means of recording observations and facilitating a comparison of the work of the different observers, Gibson² suggested the use of a standard chart (Fig. 1). This chart is divided into units of one sq. cm. and arranged according to the following data: The starting-point of pathological leucocytosis is assumed to be 10 M.; that is, that the highest variant of the normal leucocyte count does not run above this figure. The starting-point of the normal polynuclear percentage is assumed to be 75 per cent; that is, in conditions of health the normal polynuclear percentage does not run above this figure. The count of 50 M. total leucocytes is assumed to be the normal minimum limit, while 70 per cent is assumed to be the normal minimum limit of polynuclears. If, now, the total number of leucocytes is recorded on the left side of the page, and the percentage of polynuclears is recorded on the right side of the page, and the normal maximum and minimum of the two be placed on their relative horizontal lines, i. e., 5 M. leucocytes on the same line as 70 per cent polynuclears, and 10 M. on the same line as 75 per cent polynuclears, with the horizontal interspaces equally subdivided and higher percentages and thousands added thereto, it will be found that a chart is formed that is very convenient for single observations.

When we began our observations two years

*Author's abstract of paper read before the Hennepin County Medical Society, March 2 1908

ago, we recorded on this standard chart. We very soon found, however, that, while the horizontal arrangement seemed to be correct, the vertical subdivision of the entire page made an extremely complicated diagram when a curve was struck on several observations on the same patient. Now, while it is true that usually only the first observation is of any particular value from the clinical standpoint, it occasionally happens that numerous observations should be recorded either for clinical controls or in order to determine the value of the method itself. I have, therefore, modified Gibson's chart as shown in Fig. 2 et seq. It will be seen here that a double vertical column is used for each day's observations. The left subdivision of the column records the total leucocytes, and the right subdivision records the percentage of polynuclears. The chart thus becomes essentially a series of Gibson charts placed side by side in a small compass on the same page. It also accentuates the slope of the line connecting total leucocytes with polynuclear percentage. Thus, the resistance-line is a heavy unbroken one; the leucocyte curve is indicated by a fine dotted line, and the polymorph by a slender broken line. The difference in the complete record of a case on the two charts is well shown by Figs. 1 and 2.

To assist in the interpretation of the resistance curve on the chart, we may compare it roughly to the temperature curve. Thus, wherever the line lies high and is going up, the patient's resistance is bad; when it is low and going down, the resistance is good.

Our observations have been made by the various members of the laboratory staff, the first one usually within a few minutes after the arrival of the patient at the hospital. We have ordinarily made our differential counts in fixed preparations. Occasionally, where great haste has been necessary, two men have worked simultaneously on the case, one making the total white count and the other the differential count. We have not, however, found Deaver's⁶ objection to the method on account of the immense amount of time necessary to make the counts, a valid one. An experienced man working in his own laboratory, and with the patient readily accessible, can make a very reliable count in twenty minutes. This time may be halved by two men working simultaneously on the preparations.

We have grouped our cases roughly into (A) those which come under observation on or before the third day, and (B) those which come under observation on or after the fourth day.

In group "A" we have (1) cases of acute

catarrhal appendicitis; (2) cases of early purulent appendicitis without walled-off abscesses; and (3) cases of chronic appendicitis without pathological evidence of the real or imagined acute exacerbation.

Class A-1 is illustrated by the following chart (Fig. 3¹¹):

Case 22,751 is a 24-hour case, a simple catarrhal appendicitis in a woman 31 years of age in apparently good condition. She had 15 M. total leucocytes with 81 per cent polynuclears. Her resistance-line on the standard chart thus rises toward the right, indicating a slight disproportionate increase of the polynuclears.

All of these cases were ambulance cases and were more or less affected by the railway journey. In all of them a disproportionate increase of polynuclears over total leucocytes was parallel with the clinical condition and the pathological findings. While these cases are selected ones from a group, the others show exactly the same parallelism of blood-findings with clinical conditions.

Class A-2 is represented by the following case (Fig. 4¹²):

Case 22,750 is a 60-hour purulent appendix in a girl 17 years of age. Here the total leucocyte count was 20 M., with 28 per cent polynuclears. Operation disclosed a large abscess very imperfectly walled off.

The third group of early cases (Class A-3) is represented by the following (Fig. 5):

Case 23,211 is a woman, 35 years of age, who passed through several attacks of appendicitis and was brought into the hospital 18 hours after the supposed onset of the acute attack. The total leucocytes were 83 M., and her polynuclear percentage 68. Her appendix, when removed, showed the result of chronic inflammation in its adhesions, etc., but no acute inflammation whatever. These two cases¹³, though representing but a small group from our list, are here inserted as showing the possible value of the differential leucocyte count even considered negatively.

The second large group, Class B, i. e., fourth-day or later cases, may be subdivided into (1) cases in which a well-marked-off abscess exists; (2) cases in which there is an imperfectly walled abscess; and (3) cases in which there is a very small and disappearing abscess.

It is in this group of cases, that is, between the fourth and twelfth days, in which we need all possible data concerning each individual case

11. Four cases of this type given in the paper as read.
12. Four cases of this type given in the paper as read.
13. Two cases of this type given in paper as read.

in deciding whether or not immediate operation is necessary.

Case 20,615 (Fig. 2) is a fifth-day case in a boy 18 years old. His total leucocytes were a trifle under 19 M., and his polynuclear percentage 82 when he entered the hospital. The following day his clinical condition was somewhat improved, and his differential count showed a corresponding reduction. On his third day, however, his clinical condition seemed worse, and his differential count a correspondingly rising resistance-line. He was, therefore, operated on, and a large abscess drained. Two days later, as nearly always happens when a case is operated on when a rising resistance-line is present, his differential count had very materially risen, showing a total leucocyte of 22,500, and a polynuclear percentage of 88. This on the following day was materially reduced, and he went on to an uneventful recovery.

We pass now to cases of a later period with well-walled-off, though large abscesses.

Case 18,393 (Fig. 6) is a twelfth-day case of this type in a man 33 years of age. Just before the operation the total leucocytosis was 12,500, and the polynuclear percentage 76. Six hours after the operation the leucocytes arose to nearly 22 M. and the polynuclear percentage to 89, showing the effort of the leucocytes to meet the increased absorption toxemia. The following day, however, showed markedly disproportionate decrease in the polynuclear percentage.

Coming now to Class B-2, that is, later cases in which there is more or less clinical evidence of peritonitis, let me present two cases¹⁴.

Case 22,383 (Fig. 7) is a man 25 years of age in the tenth day of his attack. While his total leucocytosis is only 22 M. and his polynuclear percentage is 96, a very bad resistance-line. Clinically, the man seems profoundly toxic though not moribund. Operation shows badly walled abscess.

Group B-3, consisting of late cases with small walled abscesses will be illustrated by the following two cases:

Case 24,990 (Fig. 8) is a tenth day case in a male 30 years of age. He had 10 M. leucocytes, 60 per cent of which were polynuclears. Operation revealed a small well-walled abscess.

SUMMARY

Though no sweeping conclusions would be warranted from the preceding data, nor, it seems to the writer, even from the sum total of all the cases that have hitherto been published, yet, so

far as the cases go, the following statements may be made:

1. Sondern's hypothesis, that the polynuclear percentage is an index of infection, the total leucocytosis an index of body reaction, and their proportional relationship an index of resistance, seems to be supported. The more important exceptions to this are in moribund cases and perhaps in children.

2. As practically applied in early appendicitis cases the disproportional polynuclear increase, i. e., a rising resistance-line, indicates a more or less severe infection, which is not being properly cared for by the body. The higher and longer this line, the more serious the case.

3. A proportional polynuclear percentage or a disproportionate polynuclear decrease, if well marked, indicates mild or well-cared-for infection.

4. The value to the surgeon in early cases is but little, since most early cases are operated on anyway. It may be of some value negatively in indicating that the supposedly acute exacerbations of chronic appendicitis are not present.

5. In cases between the fourth and fourteenth days, the resistance-line is of great value to the surgeon in indicating the patient's poor resistance and the necessity for immediate operation. The operative findings in these cases bear out the leucocyte determination with wonderful accuracy.

6. In cases like those in No. 5, a horizontal or falling resistance-line indicates that the patient is taking care of the infection. If the infection is severe, as shown by a high though falling line, the patient may perhaps best be given medical treatment rather than submitted to operation.

7. When such a case as is indicated in No. 6 is being kept under observation, the resistance-line should be determined daily; and should the line begin to rise, the patient may be submitted to operation.

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14. Two cases in paper as read.

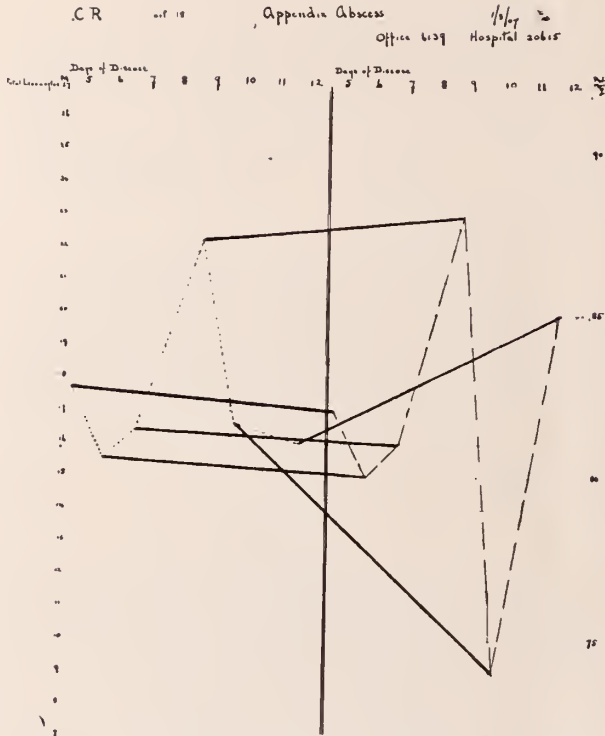


Fig. 1. Case recorded on Gibson's Chart.

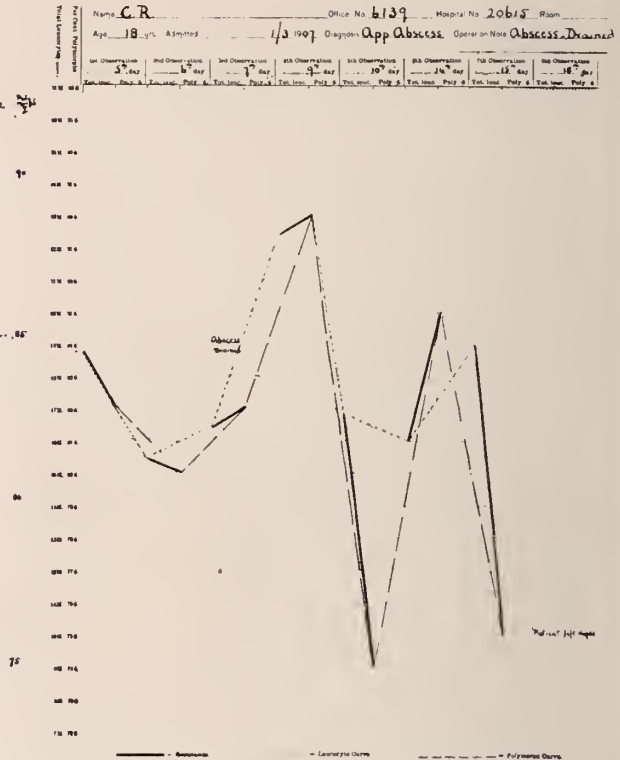


Fig 2. Same case as Fig. 1, recorded on author's chart. Fifth day case with well-walled abscess.

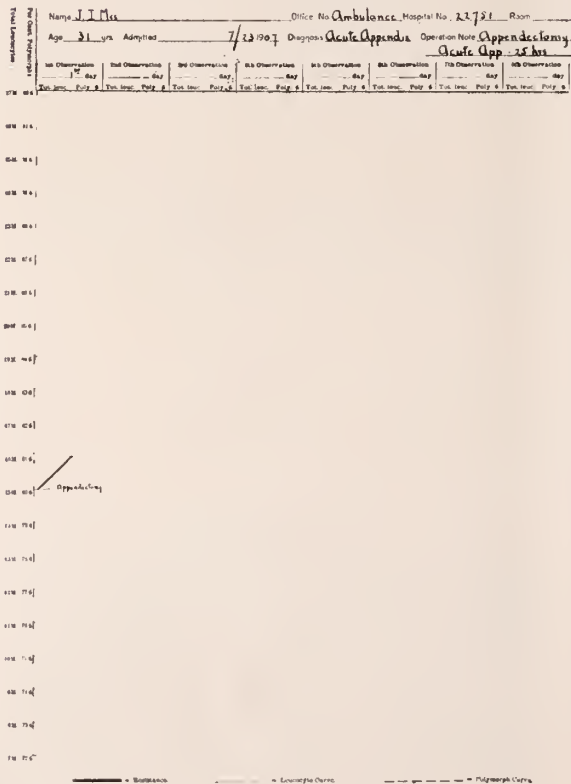


Fig. 3. Acute catarrhal appendicitis.

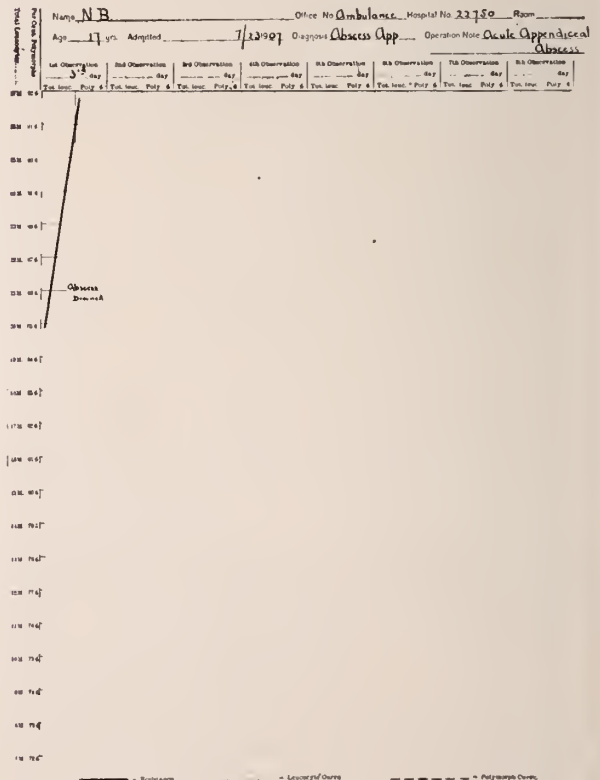


Fig. 4. Early purulent appendicitis without walled-off abscess.

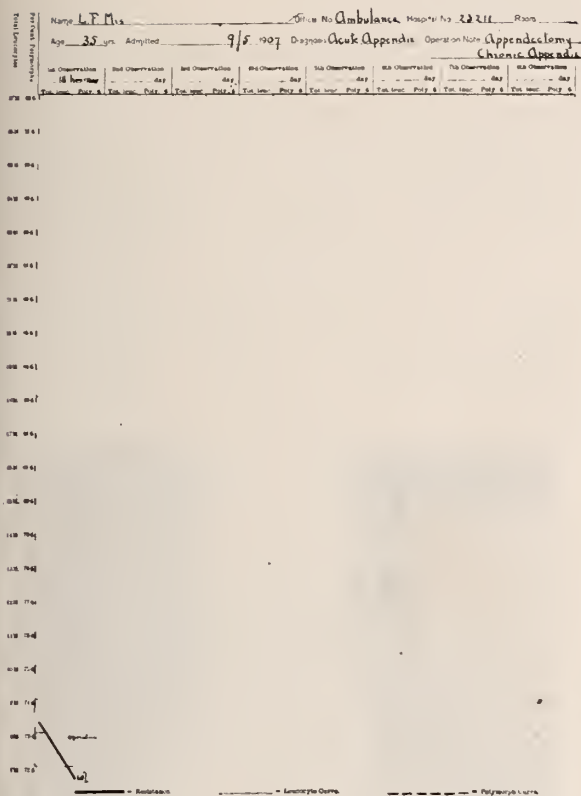


Fig. 5. Supposed acute appendicitis occurring in the course of chronic appendicitis. At operation only chronic lesions were found.

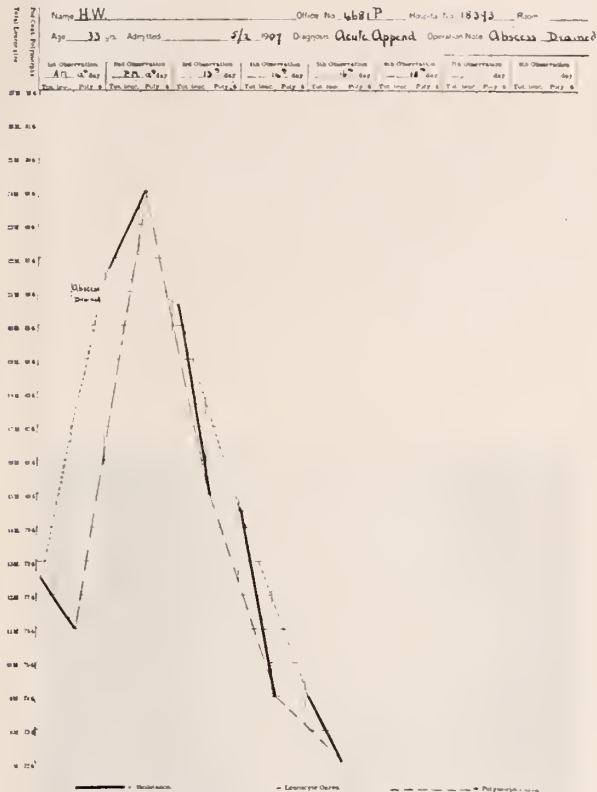


Fig. 6. Twelfth-day case. Well-walled abscess.

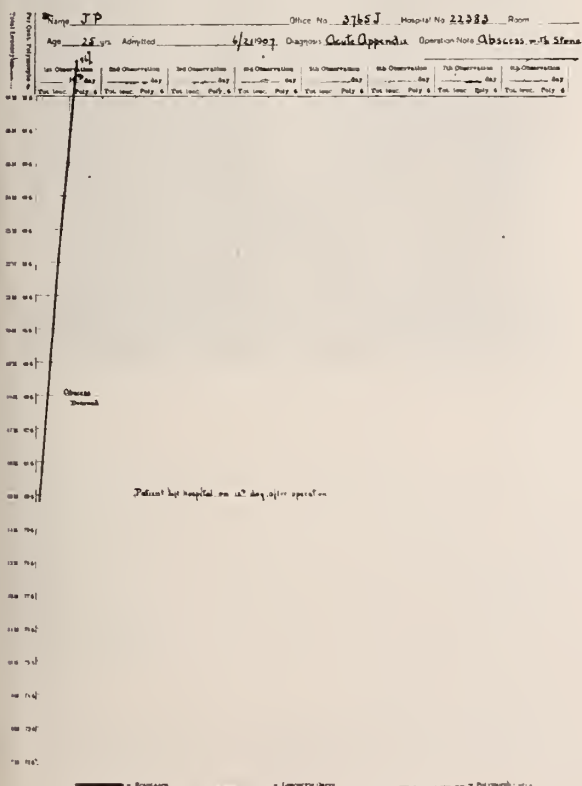


Fig. 7. Tenth day. Badly-walled abscess.

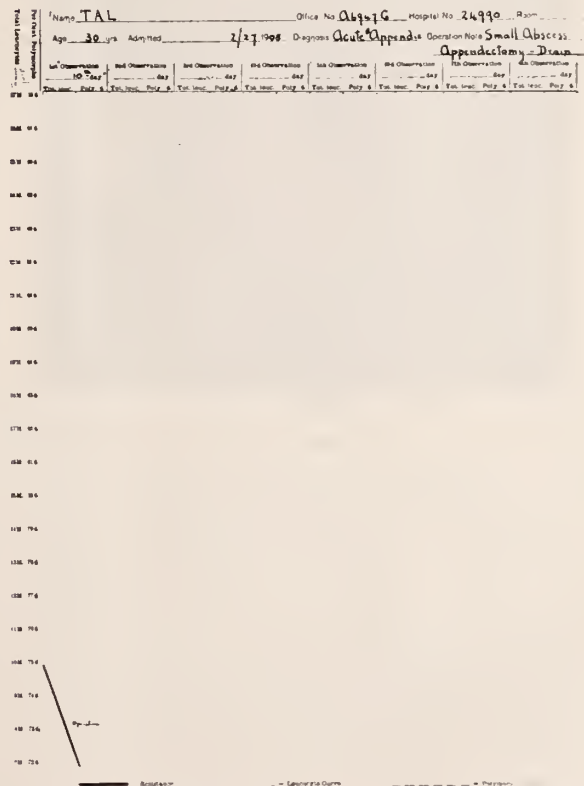


Fig. 8. Tenth day case. Very small, well-walled abscess.

"CHARCOT JOINT"

By FRED E. LEAVITT, M. D.

ST. PAUL

According to Rotter 76 per cent of the neuro-pathic arthropathies of tabes dorsalis involve the lower extremities, especially the knee-joint; and 92 per cent of the joint changes accompanying syringomyelia affect the upper extremities. This is accounted for by the fact that syringomyelia is found so frequently in the cervical region of the cord.

It is stated that Mitchell called attention to the

There is a serous effusion into the joint which may after a short time be absorbed, the disease being unmarked by either fever, pain, or redness. With or without absorption of the serous effusion, the joint-capsule remains relaxed and weakened, the ligaments show a tendency to undergo softening, and the articular ends of the bones are rapidly destroyed.

In hypertrophic arthropathies proliferative



Fig. 1.



Fig. 2.

Neuropathic Arthritis.

joint complications of nervous diseases in 1831, but not until 1868 were such conditions given a fixed position in articular pathology. At this time Charcot gave them classical description. While joint complications may follow injuries of the peripheral nerves or of the spinal cord, they are for the most part associated with the chronic diseases known as *locomotor ataxia* and *syringomyelia*.

processes predominate, extra-capsular stalactitic growths and exostoses being of common occurrence. Atypical bone-formation is found in the contiguous tendons and fascia. On the other hand the atrophic form is degenerative and leads to the destruction of the bony components of the joint. Often the entire epiphysis is changed in its conformation.

Treatment is palliative. When the effusion is extreme, temporary benefit may be obtained by

tapping and injection of carbolic acid, as in the treatment advocated for hydrarthrosis. Joint-fixation by proper appliances or retentive dressings may be of avail in locomotion. When the disease is limited to the knee, recourse may be had to excision with a hope of securing a firm limb. Rotter has thus excised the knee in four cases, with fair results in two.

CASE

The case in the photograph. Mrs. C., aged 60 years; Italian. (See illustrations.) Eleven or twelve years ago she complained of being unable while walking to come to a stop without grabbing hold of some one, or directing her course into some other object. A well-known neurologist

said she had locomotor ataxia. She asserts that before this difficulty in walking came on, she was never sick a day in her life.

The present joint-affection was noticed a year or so ago, but not until recently did the articulation give way entirely. There has been no pain in the knee, nor does manipulation occasion any. The joint is thoroughly disorganized and can be moved in any direction to an abnormal degree. (Observe the angle of the leg as the nurse abducts the foot in Fig. 2.)

The removal of the gelatinoid fluid did little permanent good. A plaster cast was worn for a time, but was discarded for a crutch upon which she now hobbles around her humble shack.

MENTAL CONTAGION*

BY ARTHUR S. HAMILTON, M. D.

MINNEAPOLIS, MINN.

Medical and general literature has, of late years, contained many references to the power of suggestion and suggestive therapeutics, and it is now an accepted fact that man is, like all other social animals, pre-eminently a suggestible being. That it was necessary for him, as well as for other animals who live in social communities, to develop this characteristic, in order to conquer in the struggle for existence, has been well stated by Boris Sidis¹, who says: "When animals, on account of the great dangers that surround them, begin to move about in groups, in companies, in herds, they must become more and more susceptible to the emotional expression of their comrades, and reproduce it instantaneously at the first impression. Suggestibility is of vital importance to the group, to society, for it is the only means of rapid communication brutes can possibly possess." So, in human society, "the rules, the customs, the laws of society, are categorical, imperative, absolute. Blind obedience is a social virtue." "The vast majority of persons of our race," writes Francis Galton, "have a natural tendency to shrink from the responsibility of standing and acting alone; they exalt the vox populi, even when they know it to be the utterance of a mob of nobodies, into

the vox Dei, and they are willing slaves to tradition, authority, and custom."

Everyone can readily recall instances of suggestion acting on himself. It is only necessary to bear in mind how quickly a yawn, or even the mention of a yawn, will set a whole room agape to realize how quickly we will react in such matters. And how many times do we find ourselves repeating an action we have noticed only subconsciously in some one else?

Which one of us during our student days did not run the gamut of diseases from mumps to meningitis, suffering every symptom of each one as his attention was directed to it?

These are more or less every-day affairs, and in their commonplaceness it is difficult to recognize the same tremendous force that has led men, not only to perform magnificent deeds of heroism, but, as well, to commit, in the name of religion, patriotism, or other good cause, every crime in the calendar; for society and the mob would seem to be even more open to suggestion than the individual.

It has been said that men think in crowds and go mad in herds. Thus are explained the astounding public upheavals that have agitated the world at intervals in almost all ages and climes. The middle ages, in particular, teemed with these epidemics, of which the most remarkable were cer-

*Read before the Hennepin County Medical Society February 3, 1908.

1. "The Psychology of Suggestion," by Boris Sidis. To Sidis' book I am indebted for several historical references appearing in this article.

tainly the crusades. Hemrich von Sybel, speaking of the first crusade, says: "We can hardly understand such a state of mind. It was much as if a large army were now to embark in balloons in order to conquer an island between the earth and the moon, which was also expected to contain the paradise." Inflamed by the eloquence of the Pope, and the half-crazed Peter the Hermit, all Europe was moved to save the Holy Sepulchre. All classes of society were affected. Swarms of men with their wives and daughters, infants in arms and grandsires on the verge of the grave, made up the motley army of deluded visionaries. Even the children became infected, and between the fourth and fifth crusades, led by prophets of from eight to ten years of age, they, too, in bands of thousands, set out for the Holy Land to fight the Turks, forsooth. Neither royal command nor parental restraint availed to stop them. The miserable remnant of this enormous army of innocents, which was left after disease and hunger and neglect had done their work, was taken to Africa and sold into slavery.

No sooner had the crusading mania declined than the star of the flagellants arose, first in Italy and later over all Europe. In the words of a historian of that day: "An unexampled spirit of remorse suddenly seized on all the people. The fear of Christ fell on all; noble and ignoble, old and young, and even children of five marched on the streets with no covering but a scarf around their waists. They each had a scourge of leather thongs, which they applied to their limbs with sighs and tears with such violence that blood flowed from their wounds."

In the next century the dancing mania appeared, and cities and towns were filled with crowds of dancing people. In Italy the epidemic took on a slightly different form, and it was believed that any one bitten by a tarantula must necessarily die unless he danced to the tune of the tarantella. Tarantism then became epidemic in Italy. Neither the aged nor the young was spared, and at one time it was stated that practically every one in Italy was more or less affected.

In the eighteenth century demonophobia, or the fear of witchcraft, spread like wildfire through Christendom. The match was applied by Pope Innocent VIII, when, in his bull of 1488, he called on the faithful to rescue the church from the power of Satan; from the atrocious, unpardonable sin of witchcraft. From this time on for over a century and a half Europe was really a pandemonium. If a man did not wish to

be accused of witchcraft or sorcery himself, he had to be active in witch-finding, and on every hand were those whose sole business it was to discover and prosecute and persecute the poor unfortunates who were suspected. Fires for the burning of witches "alive and quick" blazed in almost every town, and literally hundreds of thousands of men, women, and children were burned, drowned, and tortured for this supposed sin. The Reformation did little to change this state of affairs. Luther was a firm believer in witches and said he would burn them all. Lord Bacon, "the greatest, wisest, and meanest of mankind," and Lord Coke sat in the House of Commons and assented to the passing of the most stringent laws against witchcraft, and these laws also received the sanction of twelve bishops of the Church of England. Any peculiarity was, in those days, sufficient excuse for persecution, and, naturally, old and demented people, the deformed, hysterical, and insane furnished many victims, though hundreds of little children were martyred in the same cause. Strange to say, many accused themselves.

Three of the tests which furnished infallible signs of being bewitched may be of interest to medical people. The first was the finding of anesthetic or analgesic zones,—now well recognized as hysterical manifestations and readily developed through suggestion,—and to discover these marks of the devil, witch-finders, armed with long pins, roamed around the country pricking the flesh of suspects. The second was as follows: If a woman could endure tortures without weeping it was a sure sign she was a witch, for Matthew Hopkins, the Witchfinder Generall, as he called himself; maintained that no witch could shed more than three tears and those only from the left eye. King James, in his treatise on demonology, refers to the same thing, and, commenting on it, says: "Albeit the womankind especially, be able otherwise to shed tears at every light occasion when they will, yea, although it were dissembling like the crocodiles." Another test was the trial by water. The victim had his hands and feet tied together crosswise, the thumb of the right hand to the toe of the left foot and *vice versa*. He was then wrapped in a blanket and laid on his back in a body of water. If he sank he was innocent; if he floated he was guilty and was taken out and burned "alive and quick."

In the present day, though society is still subject to mental epidemics, as witness Christian Science, faith cure, outbreaks of hysteria in girls' boarding-schools, Lourdes and St. Anne de Beau-

pré pilgrimages, patent medicine cures, and many of the numerous religious revivals, yet the state of public enlightenment is such that they assume a much milder form.

With these historical proofs of the swaying of whole countries and continents by suggestion it is not difficult to believe that an insane or abnormal member of a family or community will invariably exercise a bad influence, the degree of its maleficence being determined by the power of resistance of the family or community; and, if there be any practical point to this paper, it consists in calling attention to the advisability of the early segregation of the insane, the idiots, and the imbeciles, not only because of the outlook for their cure or improvement is much better when they are thus treated, but because of the unhealthy mental influence which is otherwise constantly exercised on friends and neighbors.

The following cases show very plainly the morbid influence of the insane or the abnormal on other minds whose power of resistance has, from some cause, been lessened. They constitute cases of what is ordinarily known as communicated or induced insanity, the *folie à deux* or *folie communiquée* of the French. Naturally, paranoia, formerly sometimes called reasoning insanity, and the paranoid form of dementia præcox are more likely to be transferred than other forms of insanity. It is of course impossible to transfer the pathologic basis of the mental disturbance, even when the hallucinations of delusions are fully adopted. Consequently, as soon as the two individuals are separated, a prompt recovery usually takes place in the individual secondarily involved, provided he has not been previously markedly deficient, and it seems hardly just to call this a true case of insanity. If, however, there be some previous mental weakness, the individual is often unable to recover his former balance and the induced mental condition becomes permanent.

Group No. 1.—The following group is from the records of the Independence (Iowa) State Hospital: On December 18, 1893, a man and wife were admitted to the hospital. Nothing of any consequence was recorded as to the family of either. They had no children. The husband had always been distinctly below par, both mentally and physically. The wife, on the contrary, was a bright woman with very positive ideas. About nine months previously she had developed the delusion that her husband had been bewitched by a neighboring woman and, while acting under the control of this influence, which he was quite powerless to overcome, had been compelled to rob

his wife of various articles of jewelry, furniture, dishes, and drygoods. This delusion the husband appears to have adopted from his wife, he being completely dominated by her. After their separation at the hospital the husband very rapidly improved and was soon rid of his delusion. He recognized his wife's dominance and said he had been completely under her control. The wife improved less rapidly, but at the end of five weeks both were taken away by friends, and I have been unable to learn anything of their subsequent career.

Group No. 2.—On June 23, 1904, a woman was admitted to the same hospital with the following history: Her antecedent family record was entirely negative, except that a sister was probably insane. She had never been very rugged and had had several severe illnesses, the exact character of which is not known. She was married and had three children, of whom one died in infancy; another is in normal mental and physical health; and the third had a severe attack of scarlet fever in girlhood, and after this was not as strong, mentally or physically, as before.

Signs of mental disturbance were first observed in the mother about one year previous to admission to the hospital. Her husband had died some years before, and afterward the wife had been cared for by a brother, but, on this brother's death, only a moderate amount of money was left her, and a part even of this seems not to have come into her possession. She brooded over the loss of this money for a considerable time and then began to worry for fear she would go to the poorhouse. Later she imagined that men came about the house to bother her. At this time one of the daughters was away from home, but the other, already described as not very robust, was constantly with the mother and gradually adopted the mother's insane ideas. In the summer of 1903 they both went west with the idea of escaping their persecutors; of course, without avail. As time passed they came more and more under the influence of their delusions, the mother being always the dominant figure. Eventually they began to travel about the country, going from place to place, telling that men were after them, trying to get their money, to pen them up and kill them, to kidnap them in order to take them to the state hospital. Later the mother purchased a revolver and would go about the house at night firing it. Finally, one evening, feeling sure that she would be robbed and kidnapped in spite of her efforts, she and her daughter left home and went to a small wood near town, hoping in this way to hide

from their pursuers. Finding insufficient protection in the wood, they went to a nearby river, stripped off their clothes, left them on the bank, and began to walk down the stream. All night long they waded in the river, thinking in this way to hide their tracks. Toward morning the daughter became exhausted, lay down on the river bank, and died. The next morning they were found, the mother still sitting by her dead daughter's naked body. The mother was taken to the hospital. When admitted there was nothing in her physical condition which seemed to have any bearing on her mental state. She was a rather simple-minded old woman and was oriented as to time, place, and surroundings. She recalled the incidents of her persecution at home and subsequent flight. She said she and her daughter ran away because they were being pursued. Shortly after her admission to the hospital she was transferred to another institution, and I have not been able to learn anything as to her subsequent course.

Group No. 3.—A third group affords an even more striking instance of mental contagion than those already described. On May 28, 1898, a man and wife were admitted to the hospital. The husband was of German descent, a farmer, and a moderate smoker and beer-drinker. His general health had been good. His mother was insane for two years preceding her death, and two cousins committed suicide while insane. The wife had a good family and personal history. They had three living and healthy children.

Their first attack of mental trouble had occurred four years before when both became involved in some local church difficulty. The husband, at this time, was only mildly disturbed, but his wife had a very severe mental outbreak during which she threatened to kill her husband with a knife if he did not allow her the entire charge of their affairs, and he, being rather weak-minded, acquiesced, in order to avoid the trouble which would otherwise ensue. From this time on they led a very secluded life, not visiting relatives or neighbors or even attending church. The wife gradually became more and more erratic and more and more dominated her husband. About one week before commitment to the hospital, their mental disturbance became very much worse. While making some purchases in a store the wife saw some military badges displayed on a counter and immediately began a harangue about a revolution and war which were shortly to take place. A few days later, taking her husband with her, she went to a

schoolhouse near where they lived, demanded and secured the keys from the teacher, and, after giving the children a wild talk on war, religion, etc., sent them all home and locked the building. All that she did was in response to messages from God. She claimed that she was Manasseh and her husband Ephraim. When arrested, in order to be brought before the county commissioners, the husband and wife were separated, and, under these circumstances, the husband promptly improved to such a degree that the commissioners were unable to declare him insane, but decided to send him to the hospital, nevertheless, on the basis of his past record. As soon as the husband and wife came together on the train and had an opportunity to talk with each other, however, the wife quickly regained her mental ascendancy, and when they were received at the hospital the husband was again ready to subscribe to all his wife's delusions. At the hospital they were again separated, when the husband once more improved very rapidly except that he seemed weak-minded, and from this latter condition of mild dementia he never recovered. Four years later he was transferred to another hospital, and is there still, now a noisy, delusional, demented man. Whether his present delusions have any relation to those of his wife I am unable to learn. The wife progressed less rapidly and for a time retained her peculiar beliefs, but these eventually disappeared, she became quiet and orderly, and after a little more than two years was discharged as cured, and still remains well, managing her property and caring for her children with entire satisfaction.

At the time of the commitment of the husband and wife they had in their employ a man who was helping with the farm-work. When they were brought to the town for examination, this man accompanied them, but when he was called on for information as to the mental condition of his employers, he was found to hold exactly the same ideas as they did, and insisted that they were not insane, that they did actually receive divine commands and that, in sending them to the hospital, a great injustice was being done. Before anything could be carried out as to the commitment of the hired man he disappeared, and nothing as to his further history is known.

Persistent, remittent fever after an acute infection of the knee-joint is usually due to a systemic invasion. Such cases are best treated by laying the joint wide open (Mayo operation). —American Journal of Surgery.

INDICATIONS FOR CRANIOTOMY*

BY HERBERT W. JONES, M. D.

MINNEAPOLIS

Trephining the skull is a very old procedure, but modern brain-surgery is a product of the present generation. In 1871 Broca opened an abscess that he had properly located in the speech-center, but it was not until 1879 that MacEwen published a paper describing the removal of growths that had been diagnosed by focal symptoms. In 1886 Victor Horsley, who is still operating in London, described some ten cases where the lesion had been properly localized.

The fund of information concerning the brain has been growing rapidly ever since, and to-day in many European and American cities almost innumerable cases are being studied clinically and, later, pathologically by the newer technic to definitely settle the function of each group of nerve-cells and the path of each fibre-tract. In spite of all this increase in our knowledge the indications for opening the skull are far from being absolutely definite.

The use of the osteoplastic flap, instead of the small trephine-opening, however, has so increased the brain area to be exposed by a single operation that more indefinite indications can be relied upon than when one was limited to the smaller space of a trephine-opening.

In intra-cranial lesions the symptoms may be grouped into those caused by (a) general intra-cranial pressure and (b) focal symptoms. In inflammatory conditions, symptoms due to the suppurative process are also present, and in bony lesions the local evidences of fracture and displacement are added to the general and focal symptoms.

The most definite indications for opening the skull are the palpable fractures, either simple or compound, and punctured wounds of the skull. The only contra-indication for immediate operation of these cases is extreme shock, and, unless signs of uncontrolled hemorrhage are present, the operation can be deferred for a few hours until the patient has reacted.

In the majority of cases of head injury the bony displacement is not palpable, and the treatment of these cases by most surgeons and neurologists at the present time is a purely expectant one.

In this connection I wish to refer you to an article in the May number of the "Annals of

Surgery," by Harvey Cushing, entitled, "Subtemporal Decompressive Operations for the Intracranial Complications Associated with Bursting Fractures of the Skull." He states that in linear fractures of the vault and fractures at the base the bony displacement, if any, is slight, and the apposition is as good as or better than in fractures elsewhere, and there is no muscular pull on the fragments to displace them; hence the fracture itself is of no importance. The symptoms are brought about by intra-cranial pressure: (1) immediately, by laceration of the cortical vessels and extravasation of blood into brain tissue; (2) intermediately, with a free interval of consciousness, when an extravasation outside the dura, from the meningeal vessels, slowly augments in size; or, (3), late, often a matter of a few days, when cerebral edema occurs.

The symptoms typical of these conditions arising from compression are the slowed pulse, the rise in blood-pressure, and headache, vomiting, and choked disc.

Lumbar puncture shows blood, if there is extravasation into the subdural spaces. Cushing advises, in place of a waiting policy, an immediate exploratory and subtemporal decompressive operation, which he describes in the article, the closing paragraphs of which I quote, as follows:

During the past three years in a fairly large series of cases we have followed the routine of making a subtemporal exploration through a split-muscle incision combined with a subtemporal decompression—namely, the removal of a circle of the thin bone, about $4\frac{1}{2}$ cm. in diameter, from under the muscle, together with the dural opening. Contrary to our former high mortality in cases of basal fracture—about fifty per cent—we have only lost two out of our last fifteen cases, both of these due to the fact that a unilateral exploration alone was performed, and an extensive extravasation—extradural in one case, subdural in the other—on the opposite side of the head was overlooked.

The advantages of the procedure, in addition to its simplicity, may be summarized as follows: (1) The approach is made through the thinnest available part of the skull. (2) The opening is made under the temporal muscle, the fibres of which are split and not divided, so that, when closed, they serve to prevent too great bulging, if the tension tends to make the brain herniate, and serve also to prevent a subsequent obtrusive depression when the normal conditions have been restored. A subsequent defect in this situation is absolutely harmless. (3) In case there has been a rupture of the meningeal or of one of its branches the extradural clot is certainly brought into view by this opening, and as the meningeal trunk is exposed the vessel can be easily ligated. (4) In all bursting fractures accompanied by

*Read before the Aberdeen (S. D.) District Medical Society, May 19, 1903.

laceration of the brain it is the tips of the temporal and base of the frontal lobes which most frequently suffer, and a subdural extravasation from this source can most readily be dealt with through an opening in this situation. (5) In a large proportion of bursting fractures the lines of fracture seek out the mid-cranial fossa, and hence free bleeding from the base can be most easily drained through the temporal fossa by protective drains placed under the temporal lobes. (6) The subsequent œdema and swelling of the brain, which is an almost invariable sequel of any serious cerebral contusion and which is responsible in many cases for the pressure symptoms during the first two weeks, can be best combated by an opening in this situation under the muscle. (7) Aside from the prompt subsidence of the acute symptoms which are often seen after these operations, they appear to lessen many of the unpleasant late sequels—traumatic neuroses—which are so often a feature of the cases which have recovered without operation.

I believe, in view of our experience with this simple operation—which, in so far as the approach to the cranial chamber is concerned, differs from the subtemporal decompressive operation for tumors only in the obliquely vertical instead of curvilinear direction of the scalp incision—that less risk is run even in the milder or border-line cases by a prompt exploration and decompression, than in waiting for nature to take her own course in absorbing extravasations and œdema in an unopened skull.

Epilepsy, especially of the Jacksonian type, whether traumatic or non-traumatic, gives indications for craniotomy, although the discontinuance of a well-established epilepsy is almost never accomplished by operative means.

The danger of a future epilepsy in traumatic cases is a strong indication for early operation in which we may immediately remove any clots or spicules of bone, or repair lacerated membranes.

Jacksonian epilepsy, when taken with other symptoms, is often a valuable aid in localizing a lesion and indicating the site of operation.

There are some twenty varieties of intra-cranial growths from a pathological standpoint. These have a longer or shorter course before their existence can be diagnosed. After we have settled the existence of intra-cranial growth we can classify it into one of four divisions: 1, the larger percentage, not localizable; 2, localizable, but inaccessible growths; 3, accessible but not entirely removable; 4, a small percentage, removable surgically. The last class requires opening the skull and removal.

As soon as symptoms of intra-cranial disturbance arise the question of syphilis comes up, and we have been compelled to wait for the indefinite results of antiluetic treatment for three or four weeks before deciding definitely that craniotomy is indicated.

Schaudinn's discovery of the spirochæte pallida as the definite cause of syphilis has now been corroborated and accepted by the scientific world.

The ultramicroscope shows the organism clearly in the living state, and we have now the promise of a comparatively reliable serum reaction by which we shall be able to settle definitely within a few hours whether or not the person has had syphilis. When we can have a practical working-test of this kind done in the laboratories of the departments of health, the indications and contra-indications for opening the skull will not trouble us as they do now. Syphilis of the brain is regarded by some as a distinct contra-indication to operation, but most authorities believe that a gumma of the brain in an accessible region should be operated upon if it does not respond to adequate antisyphilitic treatment.

Malignancy in other parts of the body or constitutional disease of a serious nature is, of course, a contra-indication to craniotomy.

After eliminating removable growths, and syphilitic and secondary malignant conditions, the majority of tumors belong in the first or second divisions, not localizable or localizable but inaccessible. These often indicate craniotomy because of the general symptoms produced by them.

You are all familiar with the distressing symptoms of intra-cranial pressure produced by growths, the violent headaches, the rapid loss of strength from vomiting, and the gradually developing blindness from optic neuritis.

The skull is practically a tight box, and an extra growth inside of it has the same effect as putting the head in a vice and gradually increasing the pressure over a period of months or years.

Horsley says that it is criminal negligence on the part of the physician to allow the sight to become destroyed by intra-cranial pressure. Harvey Cushing, of Baltimore, says that the distressing symptoms, headache, vomiting, and choked disc, are a positive indication for decompressive craniotomy regardless of our ignorance of the character or location of the growth. In the October, 1905, number of "Surgery, Gynecology, and Obstetrics," Cushing has an article entitled "The Establishment of Cerebral Hernia as a Decompressive Measure for Inaccessible Brain Tumors, with the Description of Intermuscular Methods of Making the Bone Defect in Temporal or Occipital Regions," in which he describes some of his failures and successes in relieving these distressing conditions by craniectomy.

An operation which saves the sight and relieves headache until death closes the scene is clearly indicated, but must be performed so as not to produce other symptoms just as distressing.

A fungus cerebri will kill the patient in a few

weeks, and paralysis resulting from bulging of the motor area into the hernia is not accepted favorably by the patient or his friends. For these reasons the subtemporal operation, which prevents the development of a hernia, is advocated by Cushing.

Abscess of the brain is a positive indication for craniotomy. The difficulty is in localization. More than half of the brain abscesses are secondary to otitis media, and a large percentage of these are in the temporosphenoidal lobe. An osteoplastic flap will generally include the area of the abscess, while a trephine-opening will often miss it.

Sinus thrombosis calls for craniotomy as soon as the diagnosis is made, or craniotomy may be done to make the diagnosis. The results of the operation in these cases have been very gratifying.

It has seemed to me, although I know of no authority in the literature, that a decompressive operation is often indicated in cases of severe intra-cranial pressure from acute softening and edema following hemorrhage or thrombosis from arterial disease. Of course, the majority of these

patients will die, but a careful selection of cases might add several years to a useful life that has been temporarily endangered through extraordinary strain.

Hydrocephalic conditions, as is now well known, are not all tubercular, and the term *serous meningitis* is given to a condition in which there is increase of cerebrospinal fluid in the pial spaces or in the lateral ventricles.

Increased inflow or obstructed outflow is responsible for this internal hydrocephalus. Proper drainage before the pressure destroys sight or renders the patient a hydrocephalic idiot is certainly indicated. Quinke advises drainage by lumbar puncture, and he has reported cases of permanent relief from one withdrawal of the excessive fluid. He states that if the outflow from the lateral ventricles is obstructed at the aqueduct of Sylvius the lumbar puncture may cause immediate death by forcing the medulla into the spinal canal when the supporting fluid is removed below. In these cases the only relief is to open the skull in a neutral area and either aspirate the ventricles or drain them under the scalp and beneath the dura.

PHYSIOLOGIC CHEMISTRY AND DIETETICS

CONDUCTED BY

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EREPSIN IN THE INFANT

The discovery by Langstein and Soldin (*Jahrb. f. Kinderheilkunde*, 67) of erepsin in the intestine of a new-born child and of a fetus adds more evidence to that already brought forward to disprove the old theory of the difficult digestion of casein or proteins by infants.

It will be recalled that Cohnhein discovered this ferment, erepsin, which has the power of breaking down albumoses and peptones to their component amido-acids.

In the investigators' own words: "As may be seen from the following description of our experiments, erepsin is present in the calf and viable newly born infant at birth. Therefore, the same conditions are present for the complete breaking

down of proteins as in the adult, so far as these conditions are dependent upon the presence of the protein-splitting ferment."

The bearing of these results upon the practicability of high protein-feedings, as in buttermilk and simple milk mixtures, is apparent.

SEDGWICK.

OTTO FOLIN

Otto Folin, who graduated from the University of Minnesota in 1892, has become one of the most efficient original workers in the field of physiologic chemistry, and is a man highly respected by his co-workers, both at home and abroad. A short account of the development of his work should be of interest to his friends in

the Northwest, and especially to those who, with him, have passed under the instruction of Professor Frankforter.

A characteristically careful piece of work on "Urethanes" by him appeared in the American Chemical Journal in 1897. He then became a frequent contributor of the *Zeitschrift für Physiologische Chemie*, in which appeared "The Hopkins Method of Uric Acid Determination," in 1898, showing his early attention, which has been fortunately continued, to the technic of this branch of chemistry. In the same journal and in the same year there appeared an article "Concerning the Cleavage Products of Proteins."

In the same journal, in 1901, appeared his methods of urea and ammonia estimations in urine, which have since been very generally used.

Working with Schäffer (*American Journal of Physiology*, 1902) he found a periodicity in the elimination of phosphoric acid, corresponding to a periodicity in the mental condition of a case of maniac depressive insanity.

In the same year appeared, in the *Zeitschrift für Physiologische Chemie*, more technical additions to our methods for determination of uric acid and sulphates in urine, as well as the very generally used Folin method of determining the acidity of urine by titrating with phenol phthalein after throwing down the phosphates by addition of potassium oxalate.

Folin's most valuable work began with his description, in 1904, of a new method for determining kreatinin in the urine. The old method of Neubauer was open to many objections, not the least of which was the time necessary. Folin's method is a calorimetric one, which can be carried out in fifteen minutes with a few cubic centimeters of urine and has stimulated a great deal of interest, both here and abroad, in the kreatinin problem.

In the last four years there have appeared his studies on—

"Approximately Complete Analysis of Thirty Normal Urines." (Largely technical.)

"Laws Governing the Chemical Composition of Urine."

"A Theory of Protein Metabolism," and "Protein Metabolism in Cystinuria"—all in the *American Journal of Physiology*.

He was honored by a place in Hammarsten's *Festschrift* and also presented a piece of work, published in the *British Medical Journal*, in 1907, in which he showed that kreatin given in large doses is eliminated unchanged and does not affect the kreatinin output.

In his stimulating article on "Chemical Problems in Hospital Practice," which appeared in the *Journal of the American Medical Association*, for May 2d last, may be seen the result of his study of kreatinin, where he says: "I venture to predict that we shall learn more concerning the abnormal, or subnormal, metabolism of the sick, on the basis of kreatinin and kreatin determinations alone, than could be learned in another thirty years by means of the nitrogen determinations of the past."

SEDGWICK.

REPORTS OF SOCIETIES

ST. LOUIS COUNTY SOCIETY

The Society met at the Commercial club in Duluth on June 11th. Papers were read as follows:

"Colles' Fracture, With X-ray Pictures." By Dr. J. J. Eklund, Duluth; "Pyelitis in Children, With Report of Case." By Dr. W. A. Coventry, Duluth.

The papers were both excellent, and a good discussion followed.

The next regular monthly meeting will be held July 9th, at Coleraine, Minn. Dr. Kean, one of the members, has kindly invited the Society to meet at his hospital.

N. L. LINNEMAN, M. D., Secretary.

FREEBORN COUNTY SOCIETY

The Society held its annual meeting at Albert Lea on May 26th, with 10 members present.

The meeting was devoted to business, and the following were elected officers for the ensuing year:

President, Dr. G. W. Barck, Albert Lea; vice-president, Dr. J. P. Freeman, Glenville; treasurer, Dr. J. P. Von Berg, Albert Lea; secretary, Dr. O. E. Rodli, Albert Lea; censor, Dr. W. A. Bessesen, Albert Lea; delegate, Dr. O. A. Burton, Albert Lea; alternate, Dr. W. E. Todd, Albert Lea.

O. E. RODLI, M. D., Secretary.

KANDIYOHI-SWIFT SOCIETY

The Society held its semi-annual meeting at Benson on June 10th, with 11 members present. Papers were read as follows:

"Two Starvations," by Dr. G. A. Newman, New London; "Pelvic Hernias," by Dr. Benton J. Branton, Willmar.

The papers were followed by a lively discussion. G. A. NEWMAN, M. D., Secretary.

HENNEPIN COUNTY SOCIETY

A regular meeting of the Society was held on June 15th. The president, Dr. F. A. Knight, occupied the chair, and there were 30 members present.

It was moved that a committee of five be appointed by the chair to revise the constitution and by-laws, and to report to the Society on or before the first meeting in November.

It was moved that the Society instruct its delegates to the State Association to use their best endeavor to secure the amendment of Section 8, Chapter IX. of the by-laws so that said by-law shall definitely fix the method of transfer of members from one component society to another.

It was moved that the chair appoint a committee of from five to twelve members to include the president of the Society, said committee to confer and advise with the Board of Education of Minneapolis in regard to sanitation of the schools and other matters relating to the health and well-being of the school children.

It was moved that the chair appoint a committee of three members to act as a milk commission and to investigate and canvass the matter of improving the milk supply of the city, and to report at the October meeting.

It was moved that the Executive Committee consider the matter of the purchase of a lantern and necessary apparatus for the Society.

The censors having reported favorably, the following named physicians were elected to membership: Dr. Geo. E. Benson, 415 Guaranty Loan Building; Dr. Eleanor J. Hill, Donaldson Building.

The name of Dr. T. E. McDermott, 1202 Seventh street southeast, was proposed for membership.

The scientific program being in order, Dr. J. A. Watson read a paper with the title, "Conservative Turbinectomy," which was discussed by Drs. C. N. Spratt, Wm. R. Murray, J. S. Macnie, E. J. Brown and J. W. Bell, the discussion being closed by Dr. Watson.

Dr. J. P. Sedgwick read a paper, with the title, "Mytonia Congenita and von Graef's Sign." Dr. A. S. Hamilton and Dr. W. D. Shelden entered into the discussion of this paper, the discussion being closed by Dr. Sedgwick.

Dr. C. N. Spratt reported a case and showed specimen of a case of the ombosis of the large veins of the neck, following mastoid disease.

Dr. C. P. Nelson reported a case of appendi-

citis, the removed appendix containing pin worms. C. H. BRADLEY, M. D., Secretary.

THE SIOUX VALLEY (S. D.) MEDICAL ASSOCIATION

The Society held its thirteenth annual meeting in Elks' Hall, at Sioux Falls, S. D., on June 18th and 19th with about 50 members present.

Papers were read as follows:

"Retropharyngeal Abscess." By Dr. W. R. Brock, Sheldon, Iowa.

"The Importance of Diagnosis and Treatment of the Sequelae of Chronic Trachoma." By Dr. E. I. Putnam, Sioux Falls, S. D.

"Senile Endometritis." By Dr. E. Hornibrook, Cherokee, Iowa.

"Surgery of the Gall-tract." By Dr. J. N. Warren, Sioux City, Iowa.

"Evil Effects of Suspension of the Uterus." By Dr. A. J. McLaughlin, Sioux City, Iowa.

EVENING SESSION, 7:45 P. M.

"Congenital Deformities." By Dr. E. A. Jenkinson, Sioux City, Iowa.

"Appendicitis Accompanied by Local Suppurative Adenitis." By Dr. G. G. Cottam, Rock Rapids, Iowa.

"Cystic Degeneration of the Ovary." By Dr. J. H. Talbot, Sioux City, Iowa.

"Infant-feeding." By Dr. W. P. Roberts, Sioux Falls, S. D.

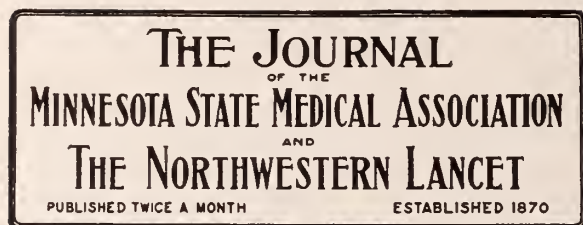
"Pernicious Anemia." By Dr. E. W. Meis, Sioux City, Iowa.

The Association was the guest of the Sioux Falls District Medical Society, and was entertained at a reception and banquet at the Kaiser's Cafe in the evening. It was a good meeting, and all enjoyed themselves. The next meeting will be held at Sioux City, Iowa, next January.

C. L. SHERMAN, M. D., Secretary.

CLINICAL CHARTS OF A CASE OF QUARTAN MALARIAL FEVER OBSERVED IN WEST AFRICA, WITH COMMENTARY

F. Creighton Wellman, Benguela, West Africa, says that infection with the quartan parasite is rare in West Africa, the malignant form of parasite being the one most frequently found. In a series of 531 cases only fourteen showed the quartan parasite. The author made a careful study of a case observed by him and gives detailed charts of it. He notes the effect of warmth and rest in lowering the temperature and pulse rate, the somewhat irregular sporulation of the parasite, the relatively small damage done to the blood, the constancy of the relative proportions of the leucocytes, the small loss of body weight and the general well-being of the patient when without any medical treatment, and the morphological identity of the parasite with that of other countries. ---Medical Record.



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JULY 1, 1908

AN INVITATION WORTH ACCEPTING

In our news columns will be found a general invitation to the physicians of the state, and of other states, to attend a special meeting of the Upper Mississippi Medical Society at the State Sanatorium for Consumptives at Walker. It will be interesting to see the beginning of the great work to be done at the Sanatorium, and it will be profitable to hear the papers to be read there.

THE CROTON-OIL FAD

The Biwabik Times for May 29th gives a detailed account of the death of Walford Peterson who died from blood-poisoning, resulting from the croton-oil treatment of healer John Till. The man had been hopelessly paralyzed, but in all probability would have lived for some years had he not taken the Till treatment, as the immediate cause of his death was evidently infection from the application of the irritant to his back. He suffered intensely after the first application of the plaster of croton-oil substance was made.

Judging from other reports of cases that have come in from time to time, the victims of the Till treatment are increasing. Several deaths have been reported, due directly or indirectly to this unclean method of treatment.

The fad has evidently become popular in Wisconsin, as it is reported that a regularly graduated physician from Chicago has either been employed to take healer Till's place or set up an establishment of his own in another town of Wisconsin north of Somerset. The same clinic is being established by another man who evidently sees remuneration in the application of this plaster method.

At one of the so-called sanitariums in Minneapolis this back-application method is employed for the cure of tuberculosis and chronic rheumatism. Fortunately for some of the victims, the officers of the alleged institution have been under surveillance and will, undoubtedly, be brought before the grand jury for indictment.

It is fair to assume that some patients are benefited by this and other forms of unscientific medical practice; at least, temporary cures have been reported, just as wonderful cures are reported from other cults in the healing art through their effect upon the emotional or mental state of the sufferer.

It is impossible to suppose that these methods of quackery can be suppressed. They have gone on through the ages and, doubtless, will continue until the people are better educated as to what is scientific and what unscientific. It is only necessary to call attention to the authorities to furnish an inspiration to the county officials, and to secure sufficient proof to demonstrate the harm which comes from these quack practices. If the people are once aroused to the situation, all these methods can be stamped out, or, at least, so far suppressed that they shall no longer be dangerous to the community.

THE DOCTOR AND THE DRUGGIST

The physicians' and pharmacists' dinner-meeting was held by the Northwestern Branch of the American Pharmaceutical Association with the Minneapolis Retail Druggists' Association at the West Hotel on Thursday evening, May 28th. Nearly one hundred persons sat at the banquet table.

The purpose of the meeting was to bring together the druggist and the physician into closer fellowship, and it was very evident that the physicians and pharmacists throughout this broad land of ours are getting together. The purposes of the joint gatherings are mutual improvement and amendment, not recrimination. The interests of both professions meet most closely along the lines of materia medica, prescribing, and dispens-

ing. Both professions still have things to learn. It will be an unfortunate day on which improvement in any of our activities shall become unnecessary. The medical profession is advancing with wonderful strides in many directions, and the development of pharmacy along the many lines of its subdivisions has been no less marked. Both professions should grow equally and concurrently along the more specific lines in which their interests merge. These have just been named as *materia medica*, prescribing, and dispensing. The art of prescribing should be co-equal and co-ordinate with the art of dispensing. Both arts require an intimate knowledge of *materia medica* and metrology. Prescribing necessarily precedes dispensing. Because the art of prescribing has been practiced only indifferently during the last two decades, the art of dispensing has suffered proportionately. It may be just to say, therefore, that the medical profession by the character of its prescriptions determines, in a large measure, the qualifications of the pharmacists, and in the degree in which the prescribers have strayed from the high standards of the *Pharmacopeia*, they, more than any other one factor, have contributed toward the delinquencies in the pharmaceutical profession occasionally complained of by the physicians. The person who is directed by a prescription to remove from a stock-bottle a quantity of ready-made pills or tablets of a specified make and place them in a box, and write directions thereon, may be a pharmacist, but he need not be. This is possibly the only defense that pharmacists can make for those few of their colleagues who cannot fully meet the requirements of the average prescriber.

While prescriptions calling for purely proprietary remedies the composition of which is quite unknown to the prescriber, are decreasing in number, the fact still exists that there are yet altogether too many such to do credit to the medical profession. In addition to the proprietaries of secret composition, vast numbers of pharmaceutical mixtures of known composition are put on the market and are prescribed by physicians. If the physician specifies makes other than the pharmacist's, the trained and skilled pharmacist is deprived of his right to practice his profession of preparing and compounding remedies upon the demand of the physician. The pharmacist should be a medical specialist in his particular field of work, and should have as full opportunity to practice his specialty as the oculist, aurist, or other medical specialists have of practicing theirs. The prescriber is most helped and benefited un-

der conditions in which the pharmacist has the fullest opportunities for the performance of his special work, for the physician then has the advantage of the special skill and knowledge possessed by the pharmacist. This fact is being recognized more widely by physicians, and it is one of the purposes of these meetings to give emphasis and acceleration to this tendency, so that the physician may more universally receive the special service he is entitled to and the pharmacist again come into his own. Co-operation and patience are necessary. The pharmacist should be satisfied with a gradual return of his own. The physician should be patient with those pharmacists who have not kept pace with the rapid development of their profession. The physician can help the latter by stimulating them to recognize the need of thorough professional training. With a willingness thus exhibited by both professions, mutual relations and progress should very soon become even more satisfactory than they are now.

The specific work for both physicians and pharmacists to do is to promptly and thoroughly study the *Pharmacopeia* and the *National Formulary*. These two standard works are recognized as the superior of any found elsewhere in the world. They are the products of the highest and most efficient medical and pharmaceutical skill this country affords. In using them the physician is availing himself of all that the best brains have provided for him; in refusing to use them he fails to utilize the most efficiently prepared and most eminently indorsed works, in the fields which they cover, at his command. The great bulk of the secret remedies and those of known composition are based upon the drugs and preparations of the *Pharmacopoeia* and the *National Formulary*, and they cannot in any wise be superior. That very many are inferior has often been demonstrated, and that nearly all are unnecessary and superfluous is now being conceded by numerous practitioners. The Council of the American Medical Association is doing most valuable work along these lines, demonstrating every day that the medical profession has been a most fruitful field of exploitation because it has gone astray from the *Pharmacopeia*. That there are some proprietaries of undoubted worth and merit, no one can deny; indeed, it should be freely admitted that some of them are products of the most advanced pharmaceutical chemistry, and full credit should be given to those pharmaceutical chemists who are contributing so efficiently to modern *materia medica*.

NEWS ITEMS

Dr. W. J. Graham, of Grafton, N. D., has moved to Anoka.

Dr. Peter Kierland has moved from Rushford to Mahnomen.

Dr. G. M. Sewall, a recent graduate of Hamline, has located at Bruno.

Dr. Chas. L. Chambers, of Bismarck, N. D., is doing post-graduate work in Boston.

An addition to St. John's Hospital of Red Wing will be built at an expense of \$15,000.

Dr. J. D. Kane, of Belle Plaine, was married on the 17th ult. to Miss Isabel Brown, of Minneapolis.

Dr. A. K. Gunz has returned to Center City from Chicago, where he has been for the past year.

Albert Lea has been given a fine residence and a block of ground, to be used for hospital purposes.

Dr. Frank A. Winter, of the St. Peter State Hospital, has resigned, and will locate in Payson, Utah.

Dr. D. F. Dumas, of Cass Lake, was married last month to Miss Hazel Jarvis, of the same village.

All pupils entering the Fargo, N. D., schools will hereafter be submitted to a medical examination.

Dr. Charles H. Cowgill, who graduated last month from Hamline, will locate in Idaho or Oregon.

Dr. Joseph W. Warren, of Leeds, N. D., was married last month to a young lady of Grand Forks, N. D.

Dr. Benjamin D. Lemery, of Inkster, N. D., was married last month to Miss Muriel Full, of Pembina, N. D.

Dr. Henry C. Cooney, of Princeton, is in the East visiting the hospitals, where he will remain several weeks.

Dr. Homer Denman, of De Smet, S. D., has sold his practice to Dr. E. Haberman, and will locate on the coast.

Dr. C. G. Shipman, of Ely, has sold his hospital and other property to Drs. Ayers and Parker, his assistants.

Dr. W. E. Moore, of Tyndall, S. D., has been appointed Superintendent of the South Dakota State Board of Health.

Dr. A. J. McConnell, of Minot, N. D., was married on June 17th to Miss Violet Rose, of Woodstock, Ontario.

Dr. J. P. Weyrens, who has been an interne at the City and County Hospital of St. Paul, will locate at Dickinson, N. D.

Dr. H. R. Baker, of Sparta, a recent Hamline graduate, was married on June 3d to Miss Ella Eyrum, of Minneapolis.

Dr. J. A. Giroux, of Montreal, Canada, will locate in Duluth, where he has accepted a position in St. Mary's Hospital.

Dr. T. W. Hovorka, of Glencoe, has gone to Boston, where he will spend the summer in post-graduate work at Harvard.

Dr. D. Carson, of Faulkton, S. D., will spend two or three months in the hospitals of New York City and Philadelphia.

It is reported that the practice of the late Dr. O. S. Hutchins, of Canby, will be taken by his brother, who is now practicing in Wisconsin.

Dr. Joseph M. Finnell, who has been a deputy coroner of Ramsey County for eighteen years, died last month at St. Paul, at the age of 48.

Dr. Ingeborg Faustrom died at Finlayson on June 13th at the age of 55. She formerly practiced at Lindstrom and earlier in Minneapolis.

Dr. L. A. Harris has taken the practice of Dr. George C. Hanson, at Knox, N. D. Dr. Hanson has given up practice on account of poor health.

Dr. H. W. Gammell, of Madison, has employed Dr. G. H. Shrodes, of Lidgerwood, N. D., to do his surgical work and assist in his general practice.

Dr. Jens Ohnstad, of Minneapolis, is doing post-graduate work in the Chicago Policlinic and Hospital, where he will be until the middle of July.

The Board of Medical Examiners of South Dakota will meet at Deadwood, S. D., on July 8th, for the purpose of holding examinations for license.

Dr. B. O. Mork has decided to give up practice at Hills, and will be succeeded by Dr. Theo. Paulson, who graduated from Hamline last month.

Dr. Roy Andrews, who graduated from the State University last month, has entered into partnership with his father, Dr. J. W. Andrews, at Mankato.

Dr. Frederick L. Wheeler, of Minneapolis, a graduate of the State University, class of 1904, died last month. His death was said to be due to overwork.

Missoula, Montana, has a new detention hospital which would be a credit to St. Paul or Minneapolis, and one which either of the Twin Cities would be glad to have.

The trustees of Immanuel Hospital of Mankato have decided to put on an addition to the hospital building to cost \$20,000, and will double the capacity of the hospital.

Dr. George G. Balcom, of Lake Wilson, a graduate of the State University, was elected president of the Minnesota State Homeopathic Institute, which met in St. Paul last month.

Dr. Frederick H. Poppe, State University, '06, who has been an interne in the Northwestern Hospital for the past year, has accepted a position as assistant with Dr. J. E. Moore, of this city.

Dr. Oscar V. Johnson, of Sebeka, was married last month to Miss Clara Robbins, of Deer Creek. Dr. and Mrs. Johnson went East, where Dr. Johnson will take post-graduate work, mostly in New York City.

Dr. J. J. Mertens, of Lebanon, S. D., received the Republican nomination for Representative for Potter County at the primary election held June 9th. Dr. Mertens is a graduate of Hamline, class of '03.

A stock company, with a capital of \$75,000, has been formed at Electric, Mont., to conduct a sanitarium at that place, noted for its hot springs. Dr. F. E. Corwin, of Chico, Mont., is president of the corporation.

The Medical Era, of St. Louis, will devote its annual special issue to gastro-intestinal diseases, publishing between forty and fifty papers upon this subject. Sample copies will be sent free to all who request them.

Dr. Thomas Mulligan, of Grand Forks, N. D., was married on June 24th to Miss Margaret McQuade, of Seaforth, Ontario. Dr. Mulligan's professional friends of Grand Forks presented the bride a chest of silver.

Olmsted County is to have the services of a visiting nurse for cases of tuberculosis. Dr. and

Mrs. Christopher Graham, of Rochester, will pay one-half of her expenses. It is believed that county nursing can be made as effective in stamping out tuberculosis as county option in the prohibition line.

The University of Michigan confers very few honorary degrees, and such as it confers are for distinguished merit. Among those receiving honorary degrees from the University last month were Dr. W. J. Mayo, of Rochester, and Dr. F. T. Mall, of Johns Hopkins, each of whom is a graduate of the University Medical School. The degree was that of doctor of science. At the same time the degree of M. A. was conferred upon Dr. Walter Courtney, of Brainerd.

The following physicians passed the examination in Montana last month:

R. H. Beach, Brainerd, Minn.; Crawford Johnston, Culbertson; T. F. O'Hagan, Frank, Alberta, Can.; G. M. Jennings, Missoula; R. L. Igel, Mondak; M. J. Scott, R. C. Brown, Helena; E. R. Ackley, Dillon; H. H. Parsons, Missoula; H. G. Morgan, Warm Springs; E. M. Porter, Fort Benton; J. P. Aylen, Missoula; A. E. Stripp, Laurel; T. W. Collinson, Culbertson; R. B. Hoag, Musselshell; J. B. Frisbee, Butte; H. C. Michle, Jr., Charlottesville, Va.; R. Lee Crane, Park City; E. H. Freeze, Missoula; R. T. Gould, Red Lodge; R. L. Owens, Missoula.

AN INVITATION TO AN IMPORTANT AND INTERESTING MEETING

The Upper Mississippi Medical Society wishes through THE JOURNAL-LANCET to invite all medical practitioners and surgeons in the state to attend the next meeting of the society, at Walker, Minn., July 21, at the new State Sanatorium for Consumptives, where, under exceptionally favorable opportunities, a symposium of tuberculosis in its most interesting stage, the early or curable stage, will be afforded. The program given below is materially aided by the kind co-operation of some of the best known medical men in the state, with the addition of the clinic held by the Superintendent of the Sanatorium. It is hoped to make this meeting of widest possible value to the profession throughout the state. To those not familiar with Walker, we wish to say it is in the big pines on Leech Lake, one of the most beautiful lakes, and the next to largest, in the state. There are many steam and naphtha launches on the lake, which is renowned for its abundance of all kinds of game fish. There are excellent hotels, and also an historic Indian agency.

All who wish to attend will please notify Dr. G. H. Lowthian, Akeley, Minn., Secretary, at an early date, so that provision may be made to send them railroad time-tables, programs, etc. If enough are pledged to attend, it will be possible to have a special train out of Brainerd on the morning of July 21st early. To attain this end it will be necessary to notify the secretary by July 7th.

PROGRAM

- 1. The Tubercle Bacillus and Its Mode of Action. Prof. F. W. Westbrook, Minneapolis.
- 2. Ophthalamo-tuberculin Reaction, With Clinical Demonstration. Dr. Chas. F. Coulter, Wadena.
- 3. Early Diagnosis of Tuberculosis; a Clinic. Dr. Walter J. Marcle, Walker, Superintendent of the Minnesota Sanatorium for Consumptives.
- 4. Surgical Tuberculosis. Dr. Walter Courtney, Brainerd, Minn.
- 5. Skin Tuberculosis. Dr. Burnside Foster, St. Paul.
- 6. Home Treatment of Tuberculosis. Dr. J. W. Bell, Minneapolis.
- 7. After Treatment of Sanatorium Cases. Dr. H. Longstreet Taylor, St. Paul.
- 8. Ventilation. Mr. E. R. Swan, Heating and Ventilating Engineer, Cedar Rapids, Iowa.
- 9. The Cost of the Illness of the Cases of Pulmonary Tuberculosis Dying in Minnesota in 1907: How it was Distributed. Mr. Christopher Easton, Minnesota State Board of Health, St. Paul.

The Clinic will be conducted by Dr. Walter J. Marcle, at the Sanatorium, with all its available material (of the most valuable kind—the kind that can be cured, a feature of this institution), and an opportunity given to inspect the work being done there, with records and history of cases, etc., and most important the medical and hygienic methods employed there.

Discussion follows each paper seriatim. It is hoped to make this a very strong and interesting feature of each paper. Five minutes limit will be imposed; once only on floor for each paper, unless

by request, the essayist to have ten minutes to reply in closing.

There will be many of the most experienced and best known men from all over the state in attendance, who will participate in the discussions freely.

There will be three sessions—morning, afternoon, and evening.

Luncheon will be served at the Sanatorium at noon.

A banquet will be held at Walker at 7 p. m. (Bring your stethoscopes.)

FOR SALE

My practice, office fixtures, and driving outfit. Only physician in a town of 500 in Central Minnesota. Good territory, Americans and Germans. Want to take post-graduate work. Address G. B., care of this office.

PRACTICE FOR SALE

I have an offer to go in with a big mining company as surgeon, and will sell all or part of a \$6,000 to \$7,000 cash practice and well-equipped hospital, with transferable contracts. Easy practice, easy money, lots of surgery. Small cash payment, and all the time you need. City of 8,000 in northern Minnesota. Act quickly. Address, S. C., care of this office.

TO THE PROFESSION—X-RAY LABORATORY

I have a well equipped x-ray laboratory, rooms 214-218 American National Bank Building, corner Fifth and Cedar streets, and am prepared to do your radiographic or Roentgen-ray therapeutic work.—W. S. Fullerton, M. D., St. Paul, Minn.

PHYSICIANS' ATTENTION.—Drug-stores on easy payments, etc. Drug-store positions, United States or Canada. F. V. Kniest, Omaha, Nebr.

REPORTED FROM STATE INSTITUTIONS FOR MONTH OF FEBRUARY, 1908

STATE INSTITUTIONS.																Total Deaths	Tuberculosis of Lungs	Other Forms of Tuberculosis	Pneumonia	Bronchitis	Diphtheria	Scarlet Fever	Measles	Smallpox	Whooping Cough	Cerebrospinal Meningitis	Typhoid Fever	Diarrheal Diseases of Children	Puerperal Septicemia	Cancer
Fergus Falls, Hospital for Insane.....	1	2	1																											
Rochester, Hospital for Insane.....	10	1																												
St. Peter, Hospital for Insane.....	5	1																												
Anoka, Asylum.....	0																													
Hastings, Asylum.....	1	1																												
Faribault, School for Deaf.....	0																													
Faribault, School for Blind.....	0																													
Faribault, School for Feeble Minded.....	4	1																												
Owatonna, School for Dependents.....	0																													
Stillwater, State Prison.....	1	1																												
St. Cloud, State Reformatory.....	0																													
Red Wing, State Training School.....	0																													
Minneapolis, Soldiers' Home.....	0														1															
Totals.....	30	7													2															

REPORTED FROM 72 CITIES HAVING A POPULATION OF 1,000 OR UPWARDS
FOR THE MONTH OF FEBRUARY, 1908

CITIES	Population of U. S. Census of 1900	Population of State Census of 1905	Total Deaths	Tuberculosis of Lungs	Other Forms of Tuberculosis	Pneumonia	Bronchitis	Diphtheria	Scarlet Fever	Measles	Smallpox	Whooping Cough	Cerebrospinal Meningitis	Typhoid Fever	Diarrheal Dis- eases of Child- ren	Puerperal Septicemia	Cancer
Albert Lea.....	4,500	5,657	5	1		1											
Anoka.....	3,769	4,053	5	1			1										
Austin.....	5,474	6,489	4	*													1
Barnesville.....	1,326	1,566	3														
Bemidji.....	2,183	3,800	3				1										
Blue Earth.....	2,900	2,364	20	1		4											
Brainerd.....	7,524	8,131	*			3											2
Chaska.....	2,165	2,085	*														
Chatfield.....	1,426	1,300	*														
Cloquet.....	3,074	6,117	4		2												
Crookston.....	5,359	6,794	8	1			1								1		1
Detroit.....	2,060	2,149	3	1													
Duluth.....	52,968	64,942	78	11	1	9	1	5	1	1		1	1	1			
E. Grand Forks.....	2,077	2,489	5	1													
Ely.....	3,712	4,045	6			1											
Eveleth.....	2,752	5,332	6														
Faribault.....	7,868	8,279	9	2		1	1	1									1
Fairmont.....	3,440	2,955	3														2
Fergus Falls.....	6,072	6,692	8	1		1								1			
Granite Falls.....	1,214	1,340	*														
Hastings.....	3,811	3,810	7	1		1	1										1
Hutchinson.....	2,495	2,489	1														
Jordan.....	1,270	1,311	0														
Lake City.....	2,744	2,877	5														1
Litchfield.....	2,280	2,415	1	1													
Little Falls.....	5,774	5,856	6	1	1												
Luverne.....	2,223	2,272	3			2											
Le Sueur.....	1,937	1,842	6			1											
Madison.....	1,336	1,604	2														
Mankato.....	10,559	10,996	15			3											3
Marshall.....	2,088	2,243	2														
Melrose.....	1,768	2,151	0														
Minneapolis.....	202,718	261,974	250	28	7	40	1	2	1	4	1		3	2	2	2	9
Montgomery.....	979	1,281	0														
Montevideo.....	2,146	2,595	3			1											
Moorhead.....	3,730	4,794	3			1		1					1				
Morris.....	1,934	2,003	2			1											
New Prague.....	1,228	1,419	0														
New Ulm.....	5,403	5,720	7	1		1											2
Northfield.....	3,210	3,438	8														2
Ortonville.....	1,247	1,612	0														
Owatonna.....	5,561	5,651	7			4		1							1		
Pipestone.....	2,536	2,885	0														1
Red Lake Falls.....	1,885	1,797	0														
Red Wing.....	7,525	8,149	19	4		2			1								
Redwood Falls.....	1,661	1,806	2														1
Renville.....	1,075	1,229	0														1
Rochester.....	6,843	7,233	20	1	1	4											1
Rushford.....	1,100	1,133	2														
St. Charles.....	1,304	1,238	1														
St. Cloud.....	8,663	9,422	14			2		1									
St. James.....	2,607	2,320	3			1											
St. Paul.....	163,632	197,323	174	16	4	24	2	3	1		2	1	2		6	1	10
St. Peter.....	4,302	4,514	3	1		1											
Sauk Centre.....	2,220	2,463	4					1									1
Shakopee.....	2,046	2,069	3			1	1										
Sleepy Eye.....	2,046	2,312	6			1											1
So. St. Paul.....	2,322	3,458	0														
Stillwater.....	12,318	12,435	12	2		4									1		
Thief River Falls.....	1,819	3,502	4					1	1								
Tower.....	1,366	1,340	*			1											
Tracy.....	1,911	2,015	2														
Virginia.....	2,962	6,056	12			2		1								1	
Wabasha.....	2,528	2,619	4	1		1						1					1
Warren.....	1,276	1,640	3												1		
Waseca.....	3,103	2,838	5														
Waterville.....	1,260	1,383	1			1											
West St. Paul.....	1,830	2,100	4														
Willmar.....	3,409	4,040	6	1													
Windom.....	1,944	1,884	5			2											
Winona.....	19,714	20,334	35	5		5	2			1				1	1		
Worthington.....	2,386	2,276	2														

*No report received Health officer not doing his duty

REPORTED FROM 65 VILLAGES HAVING A POPULATION OF 1,000 OR UPWARD
FOR THE MONTH OF FEBRUARY, 1908

VILLAGES	Population of U. S. Census of 1900	Population of State Census of 1905	Total Deaths	Tuberculosis of Lungs	Other Forms of Tuberculosis	Pneumonia	Bronchitis	Diphtheria	Scarlet Fever	Measles	Smallpox	Whooping Cough	Cerebrospinal Meningitis	Typhoid Fever	Diarrheal Dis- eases of Children	Puerperal Septicemia	Cancer
Ada.....	1,253	1,515	*														
Adrian.....	1,258	1,184	1														
Aitkin.....	1,719	1,896	2														
Akeley.....		1,636	1														
Alexandria.....	2,681	3,051	8														
Appleton.....	1,184	1,321	1														
Belle Plaine.....	1,121	1,301	1														
Benson.....	1,525	1,766	1														
Breckenridge.....	1,282	1,850	5														
Buffalo.....	1,040	1,124	0														
Caledonia.....	1,175	1,405	1														
Canby.....	1,100	1,505	2														
Cannon Falls.....	1,239	1,460	2														
Cass Lake.....	546	1,062	1														
Chisholm.....		4,231	3														
Crowson.....	962	1,056	1														
Delano.....	967	1,023	2														
Fosston.....	864	1,000	2														
Frazee.....	1,000	1,146	2														
Glencoe.....	1,780	1,805	1														
Glenwood.....	1,116	1,718	*														
Graceville.....	856	1,032	1														
Grand Rapids.....	1,428	2,055	4														
Hallock.....	805	1,014	0														
Hibbing.....	2,481	6,566	10														
Jackson.....	1,756	1,776	0														
Janesville.....	1,254	1,205	2														
Kasson.....	1,112	1,049	3														
Kenyon.....	1,202	1,252	3														
Lake Crystal.....	1,215	1,231	0														
Lanesboro.....	1,102	1,041	0														
Long Prairie.....	1,385	1,256	1														
Madelia.....	1,272	1,290	0														
Milaca.....	1,204	1,319	1														
Mountain Lake.....	959	1,063	4														
North Mankato.....	939	1,129	0														
North St. Paul.....	1,116	1,400	1														
Olivia.....	970	1,019	0														
Osakis.....	917	1,056	0														
Park Rapids.....	1,313	1,719	2														
Pelican Rapids.....	1,033	1,095	*														
Perham.....	1,182	1,366	0														
Pine City.....	993	1,092	0														
Plainview.....	1,038	1,140	1														
Preston.....	1,278	1,320	0														
Princeton.....	1,319	1,704	*														
Rush City.....	987	1,041	0														
Rushford.....	1,062	1,040	0														
St. Louis Park.....	1,325	1,491	0														
Sandstone.....	1,189	1,539	2														
Sauk Rapids.....	1,391	1,552	2														
Scanlon.....		1,122	0														
South Stillwater.....	1,422	1,572	1														
Springfield.....	1,511	1,546	1														
Spring Valley.....	1,770	1,573	0														
Staples.....	1,504	2,163	4														
Two Harbors.....	3,278	4,402	7														
Wadena.....	1,520	1,868	1														
Wells.....	2,017	1,814	1														
West Minneapolis.....	2,250	2,530	0														
Wheaton.....	1,132	1,346	2														
White Bear Lake.....	1,288	1,724	0														
Winnebago City.....	1,816	1,553	0														
Winthrop.....	813	1,031	1														
Zumbrota.....	1,119	1,129	0														
State Institutions.....			30														
Other parts of State.....	1,012,328	1,085,886	994	50	6	114	19	18	12	2	2	4	7	3	10	5	31
Total for State.....	1,751,395	1,979,658	1953	144	24	284	34	37	18	8	5	7	14	11	27	10	75

Still births and premature births, 112 (not included in above totals).
*No report received Health officer not doing his duty

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TREATMENT OF GASTRIC ULCER*

By J. W. BELL, M. D.

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MINNEAPOLIS

The first step in the successful management of gastric ulcer is an early and complete diagnosis, which should include not alone the diagnosis of ulcer, but its exact location, and the secondary changes in the stomach due to its presence.

Clinically, gastric ulcer is met with in two forms: (1) the acute, non-indurated ulcer; (2) the chronic indurated ulcer. The treatment of the first form, acute ulcer, belongs entirely to the internist, with the exception of cases characterized by severe and uncontrollable hemorrhage, and cases of acute perforation. The treatment of the second form, chronic indurated ulcer, frequently becomes surgical, consequently the internist should associate with himself a skilled surgeon in all cases complicated by pyloric stenosis, adhesions to surrounding structures, chronic hemorrhage, dilatation with food retention, and all cases where the suspicion of beginning malignancy exists.

Surgery is called for in ulcer mainly to relieve secondary results, that is, to stop uncontrollable hemorrhage, to save life in case of perforation, to relieve pyloric stenosis and adhesions, and to secure drainage of the dilated stomach when marked food-stasis exists. In the interest of the patient, which should, under all conditions, be the first consideration, it becomes the duty of the internist to associate with himself a skilled surgeon, especially in complicated cases of chronic ulcer, in order to promptly meet complications and sequelæ.

Medical failures are due, mainly, (1) to late and incomplete diagnosis, (2) to faulty or insufficient treatment, (3) to carelessness or disobedience on the part of the patient.

In the medical treatment of gastric ulcer we should keep constantly before us the fact that there is no specific, and that the ulcer heals by virtue of the power of repair in the body, aided by complete rest of the organ involved. The therapeutic indications are (1) absolute rest of body, mind, and stomach; (2) careful feeding, gastric and rectal; (3) treatment of symptoms and complications. While the therapeutic indications remain practically the same in all cases of gastric ulcer, it is equally true that each and every case is a law unto itself, and demands the most careful study and investigation, in order to secure the best obtainable therapeutic results. Rest, first suggested by Brinton and later emphasized by Leube, is the first essential. A patient suffering from gastric ulcer should be put to bed, and absolute rest enjoined for a period of from two to four weeks, depending on the requirements of the individual case, or until such time as the characteristic pain and discomfort due to the taking of suitable liquid or semisolid food shall no longer appear. The rest-cure for ulcer does not mean, at least in the majority of cases, the strict isolation required in severe forms of neurasthenia. During this period they should receive daily alcohol sponge-baths and guarded general massage, avoiding the abdomen, with the view of improving their general condition.

*Read before the American Gastro-Enterological Association, at Chicago, June 1, 1908.

In addition to this general bodily rest in bed, complete local rest for the stomach is absolutely necessary for a period of from seven to fourteen days, depending somewhat on the severity of the case. During this period nothing but water should be swallowed. Should thirst be especially troublesome, water may be given in the form of saline enemata.

Before commencing rectal feeding, the colon should be cleared by high lavage, using two or three quarts of warm normal saline solution, repeated each day thereafter before using the first or last of the three daily nutritive enemata. One-half hour after thorough clearing of the bowel, the regular nutritive enema should be given, and repeated every six hours, the third and last one for the day to be given not later than 9 P.M. The nutritive enema should not exceed six ounces of milk and one egg, both to be thoroughly peptonized, which means at least two hours of predigestion before using. Immediately before using, add one ounce of some standard peptone and a half teaspoonful of salt, also alcohol if indicated. If the enemata are not well born, or if the rectum becomes irritable, codein or opium, in small doses, may be added with advantage. A small amount of the normal saline solution, used each morning to clear the bowel, is absorbed, which tends to diminish thirst, but it is often necessary to inject from eight to ten ounces into the bowels two hours after the evening nutritive enema, in order to lessen thirst. During this time calcined magnesia, milk of magnesia, or Carlsbad salts may be used to gently regulate the bowels and lessen acidity.

Rectal feeding should be continued from one to two weeks, depending on the requirements of the case, at the end of which time, provided the local tenderness and pain have largely disappeared, a small quantity of thoroughly cooked oatmeal gruel, previously strained, may be cautiously given by the stomach, or a small amount of cream and Vichy, in the proportion of one to three, may be given once in twelve hours, gradually increasing the amount as well as the frequency of feeding from day to day, later adding egg albumen, eggs, beef juice, and well-cooked cereals. As we increase the gastric feeding we decrease the rectal feeding. For weeks, extreme care should be used in the selection of food, adding only one additional article of food at a meal, in order that we may know the offending article of food, if gastric discomfort follows.

I have purposely omitted milk, peptonized, boiled, or raw, from the list of foods suitable for gastric feeding in the early days of the treatment

of acute ulcer. I am convinced that milk is a much over-rated food in all acute gastro-intestinal disorders, and is by no means the ideal food in cases of acute ulcer, especially during the early days of gastric feeding, following the period of enforced gastric rest. While milk is an innocent fluid outside the stomach, it soon becomes a solid in these usually hyperacid stomachs, often being promptly returned in the form of a tough curd. If milk is used it should be thoroughly peptonized, or boiled, and slowly sipped with a spoon. Cream diluted with three parts of Vichy is an excellent substitute for milk in the early period of the ulcer cure, especially in cases marked by pronounced hyperchlorhydria. In my experience cream and Vichy, well-cooked cereals, and egg albumen are better born by ulcer patients than milk, during the first period of gastric feeding. In a certain percentage of cases, marked by extreme hyperacidity, alkalies are indicated, to neutralize the excess of hydrochloric acid and to relieve the pain and gastric discomfort.

Hemorrhage is often the first definite indication of ulcer, and when the amount of blood lost is not excessive, a period of absolute rest of body and stomach, aided by bits of ice internally, and the ice-bag externally, usually suffices to control it. If the hemorrhage is severe, morphine, in small doses, sufficient to secure physical and mental quietude, is exceedingly beneficial. In case clotted blood in large amount is retained in the stomach, careful lavage with very hot water, in order to promptly clear the stomach, followed by a solution of adrenalin chloride, 1 to 5,000, permitting it to remain for a short time before removing with the tube, is an efficient method of checking hemorrhage. If hemorrhage recurs in sufficient amount to endanger the life of the patient, surgical advice should be sought with the view of immediate operation. Personally, I insist that a skilled surgeon shall see my patient as soon as possible after the occurrence of a severe gastric hemorrhage, not with a view of immediate operation, but for the purpose of becoming familiar with the patient's condition, that he may be prepared to act promptly in case the hemorrhage is sufficient to endanger the patient's life. If perforation occurs, immediate operation offers the only hope of relief.

Bearing in mind the danger of relapse, we should impress upon our patients the necessity for extreme care in the selection of food for some months. These patients should be urged to eat slowly, masticate thoroughly, avoid frequent eating, and, under all circumstances, to avoid over-

eating, one large meal being sufficient to undo the work of weeks.

In acute gastric ulcer the importance of an early diagnosis cannot be too strongly emphasized, in view of the fact that an early diagnosis means a prompt and permanent cure, thus avoiding complications and serious secondary changes in the stomach. Patients suffering from acute ulcer should be impressed with the fact that they are not cured simply because the more important symptoms have disappeared, but, on the contrary, must continue under observation and treatment until all evidence of ulcer has disappeared. In this connection I feel that we physicians are often more at fault than our patients. The desire to rout disease by a brilliant dash rather than by slow siege, is one of our not uncommon errors. Patients should be kept under careful observation and control for at least one year after apparent cure.

Permit me to reiterate that the treatment of chronic indurated ulcer belongs in part to the skilled surgeon, consequently the internist should promptly refer all complicated cases to the surgeon for investigation and, if deemed best, for operation. In case the ulcer is situated to the left of the pyloric portion of the stomach and but slightly indurated it is a safe rule to give the patient the advantage of the line of treatment suggested for the relief of acute ulcer before considering operation. Unfortunately, 80 per cent of all ulcers are situated within the limits of the pyloric portion, following Mayo's division of the stomach into two parts,—a pyloric or grinding portion, lying to the right of the cardiac orifice, and a cardiac portion to the left.

The fact that in increasing numbers each year these cases of chronic ulcer, after varying periods of improvement, following the operation of gastro-enterostomy, redevelop their former pre-operative symptoms, naturally leads to the inquiry, Is gastro-enterostomy the ideal operation for the

relief of chronic ulcer? In my series of referred cases there has been a gradual increase each year, presenting a recurrence of pre-operative symptoms, following gastro-enterostomy. My cases were operated upon by skilful surgeons, consequently no suspicion of imperfect technic would hold.

Direct excision of the indurated ulcer area, thus removing a constant source of distress and danger, would seem the ideal surgical procedure in cases actually requiring surgical interference.

The crying need of the hour is for a sharper line of demarcation between the medical and the surgical ulcer. I am convinced that many patients are subjected to the ulcer cure, who have never had ulcer, and not a few have been operated upon who would have been vastly better off under medical treatment, all of which indicates that the ulcer problem is not fully and completely solved.

CONCLUSIONS

The following conclusions regarding the management of gastric ulcer would seem warranted:

1. That an early and complete diagnosis is the first essential in the successful management of gastric ulcer.

2. That all cases of acute gastric ulcer are amenable to proper medical treatment, the only exceptions being cases characterized by uncontrollable hemorrhage and perforation.

3. That all uncomplicated cases of chronic ulcer are amenable to proper medical treatment and should be so treated.

4. That chronic indurated ulcers of long standing, involving especially the pyloric portion of the stomach, including their complications and sequelæ, frequently demand surgical interference.

5. That the end-results following gastro-enterostomy for the relief of chronic ulcer are not satisfactory.

6. That the ideal surgical treatment of chronic indurated ulcer is excision in some form.

A SHORT STUDY OF THE METABOLISM IN A CASE OF DIABETES*

BY W. D. SHELDEN, M. D.

MINNEAPOLIS

Mrs. X, aged 60. Family history, negative. She had measles and typhoid fever when young. She was a moderate user of beer and wine. At

58 her weight was 218 pounds; since then she had gradually lost weight, reaching 165 in 1906. In 1907 her weight reached 178. Her general health was good, except that for some years she felt some shortness of breath on exertion.

*Read before the Hennepin County Medical Society, May 4, 1908.

Two years ago she injured her right side by falling from a buggy, following which, for a few days, she had some asthmatic attacks, with pain in right side.

She had an attack of bronchitis, with a severe, non-productive cough, each winter for four or five years. During an attack at Christmas, 1905, she had considerable shortness of breath.

In May, 1906, she again had bronchitis, during which asthmatic attacks occurred for several days. These spells came on at night and would awaken her from her sleep with shortness of breath, tightness across the chest, with wheezing respiration.

For five or six weeks prior to September 16, 1906, she had suffered almost nightly from a return of the asthmatic attacks, while during the day she had pronounced shortness of breath. Her feet were swollen at times during the same period. Her face was not swollen, nor was there tenderness of the epigastrium noted.

For the last six or seven years she has had an occasional nose-bleed, and at times she felt a fullness and throbbing in the head, with flushing of the face.

For many years she had to pass urine once or twice in the night. Fourteen years ago the urine was negative on examination, but a reaction for albumen was obtained early in 1906. About eight years ago her physician mentioned something about the presence of sugar in the urine, but she was not positive upon that point.

For two years she has had more or less itching and scalding in passing urine. There has been no headache nor vomiting.

The first examination was made on September 16, 1906. The patient was well developed, obese, dyspneic and markedly cyanotic after slight exertion, or while in the dorsal position. There was no edema. A venous pulse was present in the jugular, which had some characteristics of a positive pulse. The arteries were moderately thickened and the pulse was full, with considerable increase of its tension. The lungs were negative. The cardiac dullness was considerably increased both to right and to the left. The apex of the heart was in the sixth space, widened, increased in force and displaced to the left. There was a slight, sharply localized systolic murmur at the apex of the heart, and at the lower sternum another systolic murmur was present that was markedly influenced by respiration. It was very faint on forced expiration, but was markedly intensified during respiration. All tones were well retained and the second aortic was accentuated.

The liver dullness extended about 6 cm. below the costal arch, and in the mamillary line the edge was blunt and firm. The spleen was not felt.

The 24-hours' specimen of urine amounted to 1,000 cc., the specific gravity was 1.022, reaction acid, moderate amount of albumen present, no sugar.

From the heart and urinary findings I assumed that the condition was a chronic nephritis with secondary cardiac dilatation and hypertrophy. I prescribed a low protein diet with a restriction of fluids to about 40 drams daily, and comparative rest. Internally a nitroglycerin digitalis mixture was given with codeinum sulph. for the asthmatic attacks.

She returned to her home and from time to time she reported moderate improvement except that it was very difficult to confine herself to the prescribed amount of fluid.

On May 14, 1907, she again consulted me, complaining still of shortness of breath.

I was considerably disappointed because she did not restrict the fluids sufficiently to give her heart the needed rest, and I asked her to save another 24-hours' quantity to determine in what degree she had failed. On the following day she appeared with a package large enough for a two days' quantity. It measured 2,050 cc., specific gravity 1.030, albumen a trace, sugar in abundance. The total sugar present was 80.2 grams. The presence of sugar at once explained the difficulty she found in following the directions regarding the intake of fluids, and it also changed the front for therapeutic attack.

She was placed upon von Noorden standard diet, which consists almost entirely of protein fats and fresh vegetables. Four days later a 24-hours' specimen was brought in which measured 1,620 cc., specific gravity 1.018. No sugar. No albumen. With the disappearance of the sugar and the decrease of fluids there was a marked improvement in her shortness of breath and the thirst. Having found that upon the standard diet the elimination of sugar had ceased it was desirable to determine her tolerance to carbohydrate. Von Noorden recommends that this be done by adding definite weights of white bread to the standard diet. Accordingly 100 grams of bread were added, and three days later a 24-hours' specimen of urine was taken. It contained 1,460 cc. of urine, with specific gravity of 1.024. No sugar was present. A week later 50 grams of bread additional was given, but the next specimen examined gave a trace of sugar. She was advised to keep the quantity of bread below 150 grams daily and report to her family

physician regularly for examination of the urine. She reported satisfactory improvement, but during the summer she undertook the care of her household, became careless about her diet, and in all led too active a life. In July, because of a return of sugar and severe symptoms it was necessary to caution her to exercise more care with her diet. In September she returned, complaining of the same symptoms, and on examination it was found that the heart was again dilated, the intake of fluids beyond control, the total quantity of urine increased, and that sugar was present.

She was advised to go to the hospital, where the necessary therapeutic measures could be under control. Upon the proper diet she improved promptly, so that in two or three days she could rest and sleep comfortably in the recumbent position. While in the hospital, the necessary material was collected for the study of the metabolism to which I wish to call your special attention, but before doing so I will complete the clinical narrative.

About four weeks after leaving the hospital, after a slow, but gradual, improvement, a focus of râles was found at the left base, a few hours later fever and pain developed, signs of consolidation rapidly appeared, and about two days after the onset of the pneumonia she died.

The study of the metabolism made in this case was begun several days after she had been upon von Noorden's standard diet, upon which the urine had become sugar-free. The food was carefully weighed and all fluids measured and recorded. The total quantity of urine and feces was saved for the same period. In order to get the stools which corresponded with the diet recorded, a capsule of carmine was given at the beginning and end of the period, the colored portions were saved after the first capsule and the uncolored were saved at the end.

The food taken during the three days consisted of—

Meat	675 grams
Cheese	195 grams
Eggs	11 grams
Fish	75 grams
Butter	180 grams
Bread	285 grams
Soup	180 cc.
Wine	240 cc.

By the aid of Atwater's tables it was computed that this diet contained:

315.8 grains of proteid, per day	105.3
452.2 grams of fats.....	150.7

160	grams of carbohydrates..	52
20	cc. of alcohol.	

The food, or caloric value, furnished by this diet amounted to 2,090 calories daily, proteid furnishing 4.1 calories, fat 9.3 calories, and carbohydrates 4.1 calories per gram.

Bed patients require 28 to 30 calories for each kilogram of body weights to keep them at a constant weight and to furnish the needed energy to maintain the functions of the body. That is, the fuel supply must equal the consumption. 2,090 calories, or the amount of her daily diet, is sufficient to sustain an average adult weighing about 66 kilos, or 145 pounds. Our patient weighed about 180 pounds, but she carried at least 40 of excess fat, so that her requirements were fully met. The peculiarity of the diet necessary here is that 70 per cent of the full value was derived from fat, and 10 per cent from carbohydrates, whereas, in the ordinary diet 30 per cent are from fats and 60 per cent from carbohydrates. The proteids in this diet were about 20 per cent, or 10 per cent above the average. These figures furnish a fair measure of her intolerance to carbohydrates, and in fact, this incapacity to utilize the carbohydrates is the salient feature in the metabolism of diabetes. You will remember that she was taking about 100 grams of bread daily, and that the addition of about 50 grams was followed by the reappearance of sugar in the urine.

The protein metabolism is studied by means of its nitrogen content. Nitrogen makes up 16 per cent part by weight of the protein molecule. The nitrogen content, of 105.3 grams of protein, the daily quantity taken, amounts to 16.84 grams. Now proteins are an absolutely necessary part of the food, and health can be maintained only relatively short periods without it. When on an absolute diet, as during fasting, about 45 to 50 grams of tissue protein are daily consumed. In such a case as the one before us there was need of more protein than simply enough to cover the necessary amount used, because our food and energy supply was largely confined to the proteins and fats. Here the problem was to cover not only the normal wear and tear, but also to utilize the proteins as energy producers to an extent consistent with her capacity to eliminate the waste products.

The method usually employed to estimate the output of this protein metabolism is to determine the total nitrogen contained in the 24-hour specimen of urine. The total nitrogen is determined by the Kjeldahl method. In the three days'

urine there were 50.323 grams, or 16.7 grains of nitrogen per day. In order to determine what proportion of nitrogen containing material was unabsorbed in the alimentary tract, the three days' stools were dried, carefully weighed, and about a gram was examined by the Kjeldahl method for total nitrogen. The three days' stools contained 2.51 grams of nitrogen, or .83 grams per day. The total nitrogen per day in urine and stools amounted to 17.58 grams. Thus, with a daily intake of 16.85 grams and an output of 17.58, she was in practical nitrogen equilibrium; that is, the proteins were absorbed, appropriated as a food, and the waste products eliminated in a satisfactory manner.

The metabolism of the fats played an important role in this case, for, as stated before, they furnished about 60 per cent of the caloric value of the food. Of course, in order to serve as a food the fats must first be absorbed in the intestine. To determine in what degree they were absorbed the stools were examined for residual fats. This was done by the Soxhlet method, which consists in extracting the fats from a carefully weighed quantity of dried stools by means of ether. This was done in the classical Soxhlet apparatus. The stools contained 8.67 grams of fat per day. The daily intake of fats was 150.7 grams, of which all but 8.67 grams were absorbed, or 5.75 per cent. Von Noorden states that 6 to 8 per cent are normally unabsorbed.

The water metabolism is another interesting feature for consideration. The daily intake of fluids during the three days' period was 1,130 cc., and the output in the urine was 1,190 cc. This apparent discrepancy must not be taken too critically in view of the many conditions present capable of disturbing the distribution of fluids, especially the cardiac weakness, and the previous excessive intake. Both conditions would operate to cause an excessive accumulation of fluids in the tissues. However, the variation is not great, and in no way detracts from the interest and importance of these findings.

The 24-hours' specimen collected just before the three days' period measured 1,710 cc., while, during the three days' period 1,190 cc. A few months before, when sugar was present, one specimen measured 2,080 cc. and after it became sugar-free 1,460 cc. In each instance the cardiac symptoms improved in a remarkable manner. This is all the more noteworthy when these findings are contrasted with those found in ordinary cases of disturbed compensation. In such a case one of the most reliable evidences of improve-

ment of the circulation is an increase of the output of urine. This contrast, it seems to me, furnishes a most emphatic argument in favor of the influence which the abstraction of fluids had upon the cardiac function in our patient.

From the standpoint of diagnosis the case was a complicated one. I am convinced that the case was primarily a diabetes. Two points in the history of the case would strengthen this view: first, that for two years she had had itching and scalding about the urethra, and, second, that she had an uncertain recollection that sugar had been found in the urine some eight years before.

The condition of the heart would tend to support the assumption of a primary diabetes rather than weaken it. When I examined the patient for the first time I made a diagnosis of chronic nephritis with contraction of the kidney, because the enlarged hypertrophied left ventricle, without valvular lesion, gave that diagnosis such firm support. The urine at the time had a specific gravity of 1.016 and contained a moderate amount of albumen and no sugar.

I have since wondered why it was that no sugar was present at that time. I remember that her first visit was made the day following the journey to the city, and that she had eaten very little carbohydrates. It is very plausible that this may have caused a temporary disappearance of the sugar. Again, it is a rather common clinical experience for a chronic nephritis with hypertrophy of the heart to develop upon a diabetes, and, in fact, this occurs usually in an obese case such as this. On the other hand, it must be noticeably rare to have a diabetes develop late in a chronic nephritis.

So far as the pancreas is concerned, the low per cent of fat in the stools, when the patient was on a diet rich in fat, would speak strongly against any chronic process affecting the parenchyma of the organ, such as a chronic pancreatitis.

From the therapeutic standpoint, it is seldom that practical dietetics supersedes cardiac stimulants in the treatment of cardiac asthma and cardiac insufficiency, but that it did so here is certain.

A large, slowly healing superficial ulcer of the leg may be due to a thrombosis of one of the small vessels leading to that part. Of course, syphilitic etiology must first be ruled out.—*American Journal of Surgery.*

SURGICAL NECESSITIES DURING PREGNANCY AND LABOR*

By JENNINGS C. LITZENBERG, B. S., M. D.

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MINNEAPOLIS

It is the purpose of this paper to consider the surgical complications of pregnancy and labor, and with Dr. Benjamin, who will discuss the surgical sequelæ, to survey in a very general way the surgical aspect of obstetrics.

The practice of obstetrics is essentially a branch of surgery, and is so recognized in all foreign countries, where the subjects of obstetrics and gynecology are taught by one chair. The accoucheur performs a surgical act every time he delivers a woman. Even the vaginal examination is a surgical procedure requiring just as rigid asepsis as any surgical operation. The essential obstetric operations,—delivery by forceps, version, intra-uterine manipulations, manual or instrumental dilatation of the cervix, embryotomy, and cephalotripsy,—deserve a dignified place among important surgical operations requiring acute surgical judgment, but, for lack of time, I shall not attempt to discuss them in this paper, but shall limit myself to a consideration of a few of the pelvic conditions requiring cutting operations, any one of which is worthy of the entire time which we have at our disposal.

I shall attempt, briefly, to present only the salient features of the following pelvic conditions requiring surgical operation on the pregnant woman:

1. Ectopic gestation.
2. Appendicitis.
3. Tumors:
 - (a) Fibroids.
 - (b) Cysts.
 - (c) Cancer.
4. Eclampsia.
5. Placenta previa.
6. Contracted pelvis.

Ectopic Gestation.—This is a condition which is entirely surgical, and it permits no medical treatment, although a few German writers have recently advised expectant treatment before rupture, with the woman under observation, and a few Americans have advocated conservative treatment after rupture, arguing that the shock of operation added to the loss of blood is worse than waiting; however, they receive very little sympathy, as the opinion is very general that operation is the only thing to do, and it must be done just as soon after diagnosis as possible, either

before or after rupture. Some advocate waiting until the patient recovers from the shock if bleeding has stopped, but Kelly puts it thus: "When rupture occurs operate immediately unless bleeding has stopped, and then operate at once, for it may begin again."

The recovery from ectopic pregnancy is entirely dependent upon early operation, and early operation is dependent upon early diagnosis. Not enough of these cases are diagnosed before rupture, partly due to the fact that these women do not seek medical advice and partly because their physician overlooks the early signs of extra-uterine pregnancy.

Appendicitis.—If appendicitis presents any differences in the pregnant and the non-pregnant it would seem to me to rather add weight to the argument in favor of operation, because there is in pregnancy a decided tendency to intestinal torpor and stagnation of feces, which would favor the development of an appendicitis, which, in turn, may start a salpingitis, thus increasing the danger of sepsis after delivery. Apitz, on the other hand, declares that pregnant women have no special tendency to appendicitis, and that pregnancy seems to confer a certain protection against infection. He avers, however, that pregnancy not only adds greatly to the danger to the woman, if an attack occurs, but half of the children die whether an operation be done or not.

Mild cases of appendicitis are more difficult to diagnose in pregnancy. I think practically all authorities agree that a severe attack of appendicitis should be considered by itself, receiving the treatment that that condition alone demands, regardless of the pregnancy, but the milder cases give rise to considerable disagreement, some advocating awaiting delivery, others immediate operation. I think the period of gestation should determine this. Early in pregnancy, except near the third and fourth months, I would advocate ignoring the pregnancy, and would reach my conclusions by taking into consideration only the demands presented by the condition of the appendix. Near term I should advise waiting in chronic cases and operation if the case were acute. Two cases will illustrate these two classes:

CASE I

A woman was brought into my service at the City Hospital in labor, and was delivered a short

*Read before the Hennepin County Medical Society, March 16, 1908.

time after her arrival at the hospital. She died the next day. The post-mortem examination showed a ruptured appendiceal abscess. This woman should have been operated on, but whether the neglect was hers, in not seeking medical aid, or her physician's, in letting a grave case of appendicitis go, I do not know.

CASE II

Chronic appendicitis; history of several attacks within a month of term; I advised waiting. Operated two months after delivery—recovery.

Tumors.—The fibroid, the cyst, and the cancer, each presents a different problem from the obstetrical, as well as the surgical, standpoint. They each complicate labor in a different manner. Fibroids may or may not demand removal during pregnancy. As a rule fibroids at the fundus need not be removed, but when one finds several fibroids at the fundus he must be careful to determine that there are none in the lower segment which might mechanically interfere with labor, for fibroids in this location and in the broad ligament usually require operation, whether they be subserous or intramural.

Fibroids grow very rapidly during pregnancy because of the increased blood-supply. If the fibroid be subserous it may be removed at any time and pregnancy allowed to proceed, but if it involve the wall of the lower segment it will be better to allow the gestation to continue to term, when a Porro-Cæsarean section should be performed. Comparatively small submucous fibroids of the lower segment may remain undiagnosed and give considerable trouble at delivery. I had one such case in which the fibroid was not palpable externally and not palpable by vaginal examination after complete dilatation. It was a tumor the size of a small orange located between the internal os and Bandl's ring, between the head and shoulders of the baby, but it was sufficiently large to prevent engagement or delivery of a living child. Cæsarean section was contemplated, but when the woman was taken to the hospital the baby was dead, so a craniotomy and delivery with the cranioclast was done. In my experience fibroids seem to favor uterine inertia and thus interfere with labor, even if there be no mechanical interference. In determining what to do with fibroids we must also remember that there are other dangers than mechanical interference with labor, e.g., rupture of the uterus, post-partum hemorrhage, and sepsis due to necrosis.

Cysts.—The indications in case of an ovarian cyst are much more positive. It should be removed, unless very small, just as soon as discov-

ered. Unlike some fibroids, a cyst must never be left to nature, for its location is always such as to interfere with labor, and there is danger of rupture of the cyst, peritonitis, and hemorrhage, or the cyst may terminate in gangrene. If the diagnosis be made at any time during pregnancy the tumor should be removed forthwith, and if the gestation be at full term a Cæsarean section is indicated following the removal of the cyst. This may be necessary even if the woman be in labor. There are some cases in which the obstetrician must content himself with attempts to push the tumor from the pelvis, or even with tapping; and after labor have the tumor extirpated.

I have said that fibroids grow rapidly during pregnancy. Ovarian cysts do likewise. Apropos of the rapid growth of an ovarian cyst, I have the following case to report:

CASE III

Mrs. B., seven months pregnant, secundipara, little if any larger than should be at this period of gestation. Cyst was not discovered.

I did not see her again until she was in labor when I was called. I was astounded to see her size. To say that she was large is to put it mildly; she was simply huge. I could not make out the position of the child, and I made a diagnosis of extreme hydramnios, but a few minutes afterward, when the amniotic sac ruptured, I knew I did not have this condition, for only the normal amount of fluid escaped. I knew then I had either ascites or an ovarian cyst to deal with, with conditions favoring the diagnosis of cyst. After a labor of less than five hours the woman was delivered of a well-nourished baby, which came by the breech. After delivery she did not seem to be any smaller. It was impossible for me to feel the fundus, but, fortunately, the placenta was spontaneously delivered and was followed by no hemorrhage. Contractions were undoubtedly stimulated by the great pressure of the cyst. I called Dr. S. M. White in consultation, and he made a diagnosis of right ovarian cyst. A month after delivery Dr. Benjamin operated and found a cyst from which six gallons of fluid were taken, and three or four more gallons escaped when the woman coughed while taking the anesthetic, rupturing the cyst. She made a good recovery.

Cancer.—Pregnancy aggravates carcinomatous growth. The tumor is liable to interrupt the pregnancy, and if the gestation go to term a large proportion of the babies are still-born, and of those born alive nearly all are weakly and many die early in infancy. The treatment, of course, depends on the time the case is first seen. If

the case be seen during pregnancy and the parents be very desirous of having an heir, the woman may be allowed to go to term, palliative treatment being instituted in the meantime. Even a palliative operation would be permissible. If one were left to his own judgment, however, he would, in all probability, not let the pregnancy go much beyond the period of viability, when a Porro-Cæsarean section would be the indication. Therapeutic abortion is now allowable. If the woman be first seen when in labor it will usually be necessary to mechanically dilate the os, which is nearly always rigid. A rapid dilatation followed by delivery with forceps or version may be necessary, or, if the baby be dead—a very common occurrence—embryotomy will be called for. Vaginal Cæsarean section may find a place in this class of cases, but so far I have seen no reports of its use in cancer, although it would seem to be the logical procedure in some of these cases; however, the danger of any incision in the cervix would decidedly limit the possibility of its use. Whether a total hysterectomy should be performed following delivery will depend entirely on whether the cancer is technically operable.

Eclampsia.—I have no intention of entering into a discussion of the treatment of eclampsia, but I wish to mention the indications for vaginal Cæsarean section in this condition. Abdominal Cæsarean section has little place in the treatment of eclampsia, but vaginal Cæsarean section was originated (Duhrsen, 1896, and Accononci, 1896) for the purpose of meeting one indication in the operative delivery of women suffering from eclampsia, which no other procedure seemed to fulfill, namely, rapid delivery, when the supravaginal portion of the cervix still remained.

All obstetricians agree that in the second stage of labor the proper treatment is immediate delivery by forceps or version, and all agree that in the first stage of labor rapid dilatation of the cervix is indicated, provided that the supravaginal portion of the cervix has disappeared; if it has not, uterine rupture might occur. Slow instrumental dilatation will cause the supravaginal portion to disappear, but in some cases the saving of this time is imperative, and it was to meet this indication that the operation was invented. The real value of this operation has not yet been determined, as the literature reports only about a hundred operations, but I believe it will have a limited field in which it will have preference over all other procedures.

Placenta Previa.—For several years past Cæsarean section has been advocated in placenta

previa. The literature is rich in case-reports, but the place of this operation in this particular complication still remains unsettled, except that it must be limited, if used at all, to placenta previa centralis, and even here its use is vigorously disputed. The situation as shown by the literature seems to simmer itself down to a controversy between the surgeon-gynecologist, on the one hand, and the obstetrician, on the other; the surgeon, not usually being an expert in the obstetrical management, naturally favors the procedures in which he is an expert, and the obstetrician, being familiar with and getting good results from his obstetrical handling of placenta previa, cannot see the necessity of resorting to an operation which has not been proved to give better results.

CONCLUSIONS

When operative conditions arise that would be dangerous to the health or life of a woman if postponed, the fact that she is pregnant should not deter the surgeon from operating, because, in fact, there is really little danger of interrupting pregnancy except in women who are excessively nervous. So tolerant to injury is the pregnant woman that extensive lacerated wounds of the abdomen, and accidents violent enough to fracture the fetal extremities, have occurred and pregnancy has gone on uninterruptedly. The condition calling for operation is usually more likely to endanger the pregnancy than the operation itself. Unless the demand for an operation be very urgent the time which corresponds to the menstrual period must be avoided; and as women seem prone to lose their babies at the third, fourth, and eighth months, these should not be selected for operating.

With these exceptions surgery upon the pregnant woman may be undertaken with little fear of unusually grave consequences.

COLLAPSE AFTER INJECTION OF DIPHTHERIA ANTITOXIN.

Fielding Lewis Taylor, of New York, relates a case of diphtheria in which, after the use of phenacetin and salol, a dose of 6000 units of antitoxin was given. This was followed rapidly by cyanosis, weak pulse, almost entire stoppage of respiration, and appearance of death. Artificial respiration and strychnine restored the patient to a normal condition, but a marked urticarial eruption followed.—Medical Record, July 4, 1908.

SURGICAL NECESSITIES FOLLOWING LABOR*

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MINNEAPOLIS

Under the title of this paper I shall consider from a surgical standpoint abdominal conditions directly due to or caused by child-birth, and some important diseases which have been brought to a climax on account of labor.

Labor may result in one or more of the following conditions:

1. Rupture of the uterus.
2. Lacerated cervix.
3. Lacerated perineum.
4. Uterine displacement:
 - (a) Retroflexion.
 - (b) Retroversion.
 - (c) Prolapse.
5. Prolapse of adnexa and uterus.
6. Cystocele.
7. Rectocele.
8. Fistula.

Other forms of disease frequently arise, or a latent trouble is lighted up or made worse, following delivery, because of severe muscular contractions or from pressure. Such as—

1. Appendicitis.
2. Salpingitis.
3. Peritonitis.
4. Septicemia.
5. Ovarian cysts.
6. Carcinoma.
7. Tubercular peritonitis.
8. Gall-bladder disease.
9. Uterine fibroids.

In the short space of time allowed for this paper it will be impossible to consider all of these diseases in detail. I shall therefore take up the most important, especially considering their surgical treatment.

Ruptured Uterus.—It is not often that a surgeon is called to operate upon a ruptured uterus, as these cases are, when they demand an operation at all, so soon fatal that no time is given for the surgeon to arrive or for the preliminary preparation, unless the case is already in a hospital.

An immediate celiotomy is the only choice when a ruptured uterus is discovered. A Cæsarean section, or uterine packing extending into the vagina and a stitching up of the rent, is necessary.

Lacerated Cervix.—The profession, almost with one accord, believe in and practice repair

of the perineum directly following child-birth, when needed, but they are not so unanimous in their opinion that the cervix should be stitched up directly following its injury.

While in general practice I repaired such rents where possible, and have always advocated that treatment when a fair amount of asepsis could be secured.

The flow of blood, and the fact that the patients are usually glad of a respite and the physician is anxious to get away to attend to other urgent calls, are some reasons why a thorough investigation of the cervix is not made at the time.

The lack of instruments, help, and the let-alone teaching are sufficient excuses to the attendant for not doing more, unless a post-partum hemorrhage, due to a torn blood-vessel of the cervix, is discovered.

I never have regretted stitching these tears, for good results, far better than from a late operation, have most always been secured.

If a tear is slight, unilateral or bilateral, and not deep, repair may take place with little or no resulting scar, but when a tear is bilateral, deep, and neglected, there results an ectropium of the lips and a red, angry, inflamed, eroded surface with chronic enlargement, congestion, and hypertrophy. The ducts of the Nabothian follicles are injured and become obstructed; and cystic degeneration of the portio vaginalis results.

Infection is more likely to occur in these cases, and the inflammatory process to extend to the body of the uterus, with consequent endometritis, and hypertrophy of the organ. The uterus being heavy, drags the adnexa and bladder down, and great discomfort necessarily follows; also a disagreeable leucorrhea is complained of. Often metrorrhagia and menorrhagia are prominent symptoms. Dysmenorrhea is experienced when the scar-tissue contracting narrows the canal, or the swollen tissue decreases its lumen. Future births are often more difficult and a great tear results in the giving away of the cicatricial tissue around the cervix. This scar-tissue occasionally has to be severed to allow labor to proceed.

In the above class of tears or in the stellate variety a Schroeder's operation is usually performed in the manner illustrated in Fig. 1. The lips are turned in as seen in Fig. 2. All of

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Fig. 1. Shows a thickened diseased cervix requiring resection. The lines AB and CD indicate the directions of the incisions. Shroeder's operation.

the cervical scar-tissue is removed, including the cysts and other diseased tissues over the partio vaginalis.

Dysmenorrhea is relieved by this method, providing no disease of the adnexa exists, future child-births are less painful, and a further tear less likely, as all elastic healthy tissue is conserved by this operation. Involution is more perfect and the uterus less heavy. It consequently reaches the more normal circulatory plane. A so-called erosion is not observed at any future time following this operation, as the diseased columnar epithelial cells at the external os are removed.

An ordinary scalpel or knife with angular blade is very satisfactory when the cervix is held down by the (Hanks) tenaculum forceps or double tenaculum on each lip. Chromic catgut is usually used for sutures.

In unilateral or bilateral tears with a small amount of scar-tissue present an Emmet operation is usually satisfactory, providing sufficient allowance is made for a contraction of the canal in the healing of the tissue.

Lacerated Perineum.—Perineal neglected by careless physicians and ignorant midwives, as well as the incomplete results obtained after repair, still give the gynecologist work to do in this field. The immediate repair is easy in most cases, and should be attended to, in nearly every in-



Fig. 2. Shows the diseased tissues excised and sutures in place, but not yet tied, to unite the vaginal margin to the cervical margin of the wound.

stance, directly following the birth of the child and before the placenta is expelled, as the hemorrhage is not so troublesome and the patient is then less conscious of pain.

Chromic catgut sutures (V. H. No. 2) should be used. They are introduced in the vagina to close the separated muscle-tissue and for the perineal body entering and emerging through the skin. Each individual tear, no matter what part of the vaginal wall or outlet is affected, should be closed, and sutures introduced accordingly.

The evil effects of a neglected, torn perineum is observed in the gaping vagina and the easy escape of the bactericidal fluid of this cavity, the greater possibility of infection from the urine and feces, or infectious micro-organism from other sources.

A prolapse and consequent retrodisplacement of the uterus and the dragging down of the adnexa and bladder-wall are the usual sequelæ.

A rectocele due to the separated levator ani fibres is also possible. The intra-abdominal force with no counter-pressure of the perineum causes the downward movement of all abdominal and pelvic organs.

Secondary Perineal Operation.—I have found that a dissection of the mucons membrane of the posterior vaginal wall, as in a Lawson Tate ope-

ration in incomplete tears, gives an easy access to the levator and perineal muscles, and in complete tears a buried row of sutures is used to close the sphincter ani, and thus preserves the vaginal mucosa necessary for future normal births.

The excision of the vaginal mucous scars may be permitted, but not of healthy mucous membrane, as tears are more liable, owing to a limited amount of vaginal tissue that is necessarily stretched at child-birth.

It is very important that the muscle fibres should be secured by the deep sutures, but not too tightly tied. All dead space should be eliminated by continuous sutures, and if there is much oozing a button-hole opening should be made in the mucous flap for drainage. A border suture in the mucous membrane completely closes the wound. An associated rectocele is usually corrected by this operation by bringing the levator ani muscles together.

Uterine Displacement.—Uterine prolapse is usually the result of a neglected perineal tear and is frequently associated with or preceded by a retrodisplacement.

The lack of perineal support or the counter pressure to the intra-abdominal force permits the heavy uterus to sag and lengthen the round and uterosacral ligaments. The intra-abdominal force in consequence is transferred to the anterior surface of the uterus, thereby forcing this organ down and backward.

The anterior vaginal wall is followed by the bladder in this downward movement: a cystocele then obtains, and often a general visceroptosis. If there is much of a perineal tear or if the levator ani fibres are greatly separated, the process of defecation forces the rectal walls between these lacerated fibres, producing a rectocele.

The descent of the uterus may be so gradual that the patient feels no acute pain or annoyance until the uterus emerges through the vaginal opening between the thighs.

All operative interventions in cases with one or more of the associated conditions should be directed towards the real cause of the discomfort, and where several complications exist they should be corrected at the same time when safe and possible.

In simple, uncomplicated cases of retrodisplacement an Alexander's operation precedes any vaginal work, and in cases associated with other pelvic or abdominal disease a laparotomy is performed, if we are certain there will be no difficulty in doing this vaginal work after the uterus

is fastened in place; otherwise the vaginal work is done first. In cases demanding a laparotomy a modified Gilliam operation is selected to correct the retrodisplacement.

I have arrived at this stage in the evolution of operations for backward uterine displacement after a thorough trial of all other reasonable methods. My own modification of the ordinary Gilliam operation consists in passing a curved artery-forceps through the abdominal fascia and muscle tissues, opposite the internal ring, from without, and pushing its way along the abdominal portion of the round ligament between the folds of the broad ligament, until a point is reached about $1\frac{1}{2}$ inches from the uterine horn, where the ligament is seized, pulling it through this abdominal puncture and stitching the ligament to the outer fascia. Elongated uterosacral ligaments in pronounced retroversions may require shortening at the same time.

The advantages for this operation are—

1. The use of the normal round ligament supports.
2. The natural direction for support.
3. It eliminates the weaker and utilizes the stronger parts of the ligaments for support.
4. It does not interfere with pregnancy.
5. No weakness of the abdominal wall is permitted at these lateral points.
6. Any associated pelvic lesions can be corrected at the same time.
7. This operation elevates the adnexa as well as the uterus, and when a good perineum exists the results are satisfactory and lasting.

Cystocele.—There is a certain percentage of cases that absolutely require a cystocele operation to bring relief, and in such cases I have of late performed this operation by making two button-hole openings through the anterior vaginal mucosa, one near the cervix and the other near the urethra, and by blunt dissection separated the mucosa between these points from the muscular layer of the bladder, after which a sling is made of this widely dissected mucous membrane by passing back and forth sutures (two or more rows) to make a firm ridge for the bladder support, the redundant portion of the mucous membrane being removed. Occasionally a purse-string suture will elevate the bladder sufficiently.

Fistula.—The surgeon is not often called nowadays to close a fistula resulting from destruction of tissue due to prolonged pressure of the child's head. When such is the case, e.g., rectovaginal or vesicovaginal, they are quite easily corrected by dividing the edges, splitting the two surfaces,

and broadly approximating their respective opposing surfaces by a chromic catgut suture.

Infection.—Occasionally following child-birth symptoms of infection are present without any apparent reason. A careful study of the case prior to and during pregnancy may determine a past infection of the tubes, a local peritonitis from a gonorrhea, or, possibly, attacks of appendicitis.

The traumatism of labor may have lighted up the disease and caused an inflammation of the appendix or a rupture of that organ, and in some instances of an old ovarian cyst. The latent disease in the tubes may also have become excited from injury. The symptoms are, as a rule, not so violent as when septicemia arises from a direct infection through the genital tract.

Should a peritonitis, from a rupture of the appendix or the tube, or should an abscess occur, the case may become quite as serious. It is important to recognize these conditions early. A leucocyte count may assist materially in this work. An operation performed for the evacuation of pus and the starvation treatment will save many a mother's life.

Vaginal drainage is to be preferred when an abscess is discovered in the pelvis. A later laparotomy for the removal of a diseased appendix, or possibly the tube or cyst, offers the greatest safety for the patient.

Tubercular Peritonitis.—A tubercular peritonitis is an occasional sequence of child-birth and may go unrecognized for some time before the patient reaches a surgeon's hands; in fact, there may be such an extensive involvement of the organs of the abdomen and pelvis as to make it necessary to remove the tubes, ovaries, and appendix, and to separate many adhesions in order to accomplish the work. The disease may have been latent with dissemination as the result of labor.

Inasmuch as this disease, usually, is first manifest in the appendix or the tube, these organs should be carefully palpated, and a careful early investigation made so that these tissues may be extirpated while the disease is confined to these areas. By the early surgical work the disease may be averted, and the patient saved months of suffering and possibly life itself be preserved.

Ovarian Cysts.—No doubt many women bear children who carry ovarian cysts throughout the pregnant state. I have had occasion to operate upon several for acute appendicitis during the pregnant state, and have found cysts of the ovaries.

These cysts may attain a large size during pregnancy, but following the birth, if not ruptured, they can and do grow very rapidly at times. Occasionally they become infected from pressure and close proximity to the bowel, and are the cause of the so-called puerperal fever. When diagnosed before birth they are best removed; after birth their removal or drainage is essential for health (see Fig. 3).



Fig. 3. Photograph of woman in Case 3, referred to in Dr. Litzenberg's paper, one month after delivery and the day before the operation. The cyst contained between nine and ten gallons of fluid.

Gall-stone disease is by no means an unusual complication of pregnancy. The gall-bladder may rupture during labor, or an inflammation result from the strain, or the stones may be dislodged and started on their journey, causing severe and unbearable symptoms.

These conditions, if at all troublesome, should receive surgical attention long before the labor period, if possible. The operation is a simple and safe one and quickly done, if undertaken early, and it offers the best prognosis.

CONCLUSIONS

1. It is time that the profession recognize the importance of carefully investigating all cases of pregnant women with possible associated pelvic or abdominal disease.
2. It is certain that many diseases, such as appendicitis, gall-bladder disease, ovarian cysts, and certain uterine fibroids, are better operated upon during the pregnant state than after the symptoms are exaggerated by the traumatism of child-birth.
3. Women who have born children may have had an irregular convalescence, due to the pres-

ence of pelvic disease that has been directly caused or exaggerated by labor.

4. Where certain complications are manifest after child-birth their early recognition and operation often offer the safest prognosis.

5. Nearly all lacerations of the cervix, vagina, and perineum are best repaired directly following the birth of the child.

6. Such repair often saves months and years of suffering (often many women will never have these repairs done later).

7. By immediate repairs other complications are frequently avoided.

8. Nearly all late cases of laceration and uterine displacement, fistulae, etc., should be corrected for the bodily and mental comfort of the patients.

It was voted to hold two more joint sessions of these two societies, one at Red Wing in October, and the other at Wabasha next July.

At the business session remarks were made to the effect that the members of the medical societies should use their influence with the lay press to induce publishers not to run advertising matter for "quacks"; and a motion prevailed expressing commendation from this joint session of two societies to those editors in the respective counties who have refused space to such advertising doctors.

A committee was appointed from the Goodhue County Society to draw up appropriate resolutions relating to the recent death of Dr. H. L. Brynildsen of Vasa.

W. F. WILSON, M. D., Secretary.

REPORTS OF SOCIETIES

WABASHA AND GOODHUE COUNTY SOCIETIES IN JOIN SESSION

A valuable and interesting meeting of the above societies was held at Lake City on July 9th, it being the fortieth annual meeting of the Wabasha Society. Papers were read as follows: "President's Address—Ectopic Gestation," by Dr. J. P. Dougherty, Wabasha; "Science and the Art of Medicine from the Standpoint of the General Practitioner," Dr. Charles N. Hewitt, Red Wing; "Later Additions to Our Knowledge of Diagnosis and Treatment of Tuberculosis," Dr. L. C. Ingram, Zumbro Falls; "The Doctor as a Teacher," Dr. A. T. Conley, Cannon Falls.

After adjournment of the meeting, a boat ride was taken to Camp Lakeview, through the courtesy of the Lake City Commercial Club, permitting the doctors in attendance to witness the review tendered Governor Johnson by the First Regiment, Minnesota National Guard.

The following officers were elected for the Wabasha County Medical Society: President, Dr. L. C. Ingram, Zumbro Falls; vice-president, Dr. C. J. McGuire, Minneiska; secretary and treasurer, Dr. W. F. Wilson, Lake City; censors, for one year, Dr. E. A. French, Plainview; for two years, Dr. J. T. Asbury, Wabasha; for three years, Dr. E. H. Bayley, Lake City; delegate, Dr. W. T. Adams, Elgin; alternate, Dr. W. J. Cochrane, Lake City.

BOOK NOTICES

DISEASES OF THE NERVOUS SYSTEM. Edited by Archibald Church, M. D., Professor of Nervous and Mental Diseases and Medical Jurisprudence, Northwestern University Medical Department, Chicago, Ill. An authorized translation from "Die Deutsche Klinik" under the general editorial supervision of Julius L. Saling, M. D. With one hundred and ninety-five illustrations in the text and five colored plates. New York and London: D. Appleton and Company, 1908. Octavo; pp. 1205. Price \$7.00.

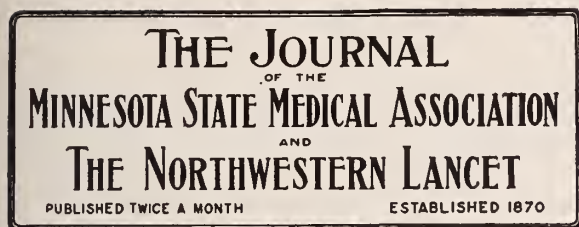
This is the fourth volume of Appleton's Modern Clinical Medicine Series. It consists of a series of monographs by the best German authors, assembled by Dr. Church into a complete book on nervous diseases.

The first 128 pages are devoted to the anatomy and histology of the nervous system with many illustrations taken from the newer German atlases. Following this are a hundred pages on neurological diagnosis, and then a chapter on lumbar puncture by Quincke.

Professor Erb has written a complete and interesting monograph on tabes dorsalis, and Eulenburg of Berlin writes on the present status of Graves' disease.

Other subjects are taken up by different men in the same masterly way, making the book a valuable addition to neurological literature.

The book is well printed on good paper, and the general practitioner will find it very readable.



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JULY 15, 1908

THE WALKER MEETING

Dr. Roberts, president of the Upper Mississippi Valley Society, writes us very enthusiastically about the meeting to be held at the State Sanatorium at Walker on Tuesday, July 21st.

Dr. Roberts says that over one hundred of our leading men will be there, and that the papers, discussions, and clinics will bring out so much of interest and value that no physician, at least no physician in Minnesota, can afford to miss it. And he also says, by way of a clincher, that the outing in "the forest primeval" will just be grand.

INFORMATION WANTED

The State Board of Health, in connection with a study of rural sanitary conditions, is anxious to obtain information relative to typhoid fever originating on farms throughout the state. A statement giving the name, address, residence by township, and conditions surrounding any case of typhoid fever in a country district, will be greatly appreciated by the Board.

The regular form of card for reporting typhoid fever cases will be forwarded to any one on application.

All communications and requests should be

sent to the Minnesota State Board of Health, St. Paul, Dr. H. M. Bracken, Secretary.

EPIDEMIC CEREBROSPINAL MENINGITIS

The serum treatment of cerebrospinal meningitis is one of the greatest advances of modern medicine. Dr. Simon Flexner, of New York, has given the medical profession the strongest weapon imaginable if his experiments can be continued by himself and others. He has made it possible to provide serum on short notice, and he is ready to coöperate with any physician who needs his discovery.

medicine. Dr. Simon Flexner, of New York, has class of bacteriolytic sera, rather than to the antitoxic class, although it is not entirely devoid of antitoxic properties. With the serum treatment the mortality-rate in 247 cases has been reduced to 27 per cent. The previous mortality-rate in cases not treated with the serum varies from 75 to 80 per cent.

A most thorough test should be given to the new remedy before it is finally adopted, but from all the literature on the subject the one conclusive point so far, is, that in early cases the disease is apparently modified in its intensity, and evidently the death-rate is materially reduced.

Dr. C. H. Dunn, of Boston, and Dr. F. S. Churchill, of Chicago, in papers read at the last meeting of the American Medical Association, have arrived at the same conclusions that Dr. Flexner has reached. Dr. Dunn's report is based on a series of forty consecutive cases, and he believes the Flexner antiserum is comparable to that of diphtheria antitoxin in diphtheria; that at times it aborts the disease, frequently rapidly relieves its symptoms, shortens its course, lessens the liability to sequelæ, and greatly reduces its mortality. The serum should be used as early as possible in all cases, even of suspected epidemic meningitis. It should be frequently repeated as long as there are symptoms or any tendency to relapse. Late cases are unfavorable for the use of the serum, but any case in which the diplococci are present has some hope of relief by its use. Some cases are resistant.

The mortality-rate in the forty cases reported was 22.5 per cent, and the rate of recovery was 77.5 per cent. Nine cases died and thirty-one recovered. Of the thirty-one cases in which the patients recovered, two were left with sequelæ, one being deaf, and one blind and deaf. The recovery was complete in twenty-nine cases, i. e., in 72.5 per cent.

This remarkable showing was exceedingly

gratifying and will relieve the curse of a disease that formerly left a terrifying chain of symptoms.

THE WAR ON QUACKERY

The beginning of the end of quack remedies, fake institutions, and money-extorting quacks is making itself felt in various quarters of the globe. To eliminate the quack and his methods is the hope of the reformer. It will take time and patience to educate the daily press and to convince the people that scientific medicine is the safer proposition.

The "Great American Fraud" reprint has done much to convince the publishers of lay periodicals that undesirable advertising does not pay in the long run, and many newspapers have wisely adopted a policy that may be copied by the lesser lights in newspaperdom, namely, to cut out advertising that does harm to an uneducated public.

In various parts of the country the quack has been sued for extortion of money, false representations, and malpractice. In our own state something has been accomplished, but there is still much to be done. A well-known advertiser known as "Dr. Ray," has been sued and a verdict returned in which it was claimed that neglect and maltreatment resulted unfavorably. The jury believed that the advertising quack had overstepped the bounds and promptly awarded damages.

"Dr." Gates is now squirming for an opening and offers to treat patients who have been given up by regular physicians. He stipulates in his recent advertisement that the names of these physicians shall be published when he undertakes the cases. He evidently sees a great light and is trying to prepare himself for his forthcoming trial. "Dr." Cunningham is on the docket, and it will be interesting to know what he thinks of the future of quackery.

The Heidelberg Medical Institute that has flourished so unblushingly in St. Paul for many years, was the defendant in a suit brought by Karoline Frei, as executrix of the estate of Frank Frei, deceased. It was claimed by the plaintiff that the deceased was circumcised by some of the operators, persons practicing in the institution, and that his death, six months later, from acute tuberculosis, was due to the operation. The defendant was evidently very much worried and summoned to its aid the president of the Ramsey County Medical Society to testify in its behalf. As a result of this unfortunate combination of things, charges of unprofessional conduct were preferred against the president and were

referred to the Judiciary Committee of the Society for investigation.

It is presumed that the defendant's expert was subpoenaed and felt obliged to testify, but it is regrettable that a member of the regular medical profession should be called to bolster up the claims of any well-known quack institution. This sort of thing makes it difficult to suppress quackery, and in a measure exonerates the quack from wrong. The public is very quick to grasp any support that makes quackery possible. The unenlightened really enjoy the thrills of humbug and do not like to be deprived of an opportunity to spend their money on quack remedies. Even though the sting is sharp and the outcome dubious, the man who patronizes a quack becomes a "repeater."

It is the solemn duty of the regular medical men to elevate the profession and its aims and to lead the people to the right path. The efforts to expose fraudulent proprietary preparations is laudable and any effort to exterminate all forms of fraud in medicine should be endorsed by medical men. This cannot be accomplished, however, until non-medical individuals become an educational factor. The outcome of the trials of quacks in Minneapolis will be awaited with interest.

Other cities have succeeded and the Twin Cities should follow good examples, or, at least, make an heroic attempt to purge themselves of this form of pest life.

NEWS ITEMS

Dr. T. J. Strong has begun practice at Enderlin, N. D.

Dr. O. L. Bertelson has resumed practice at Crookston.

Drs. Joyce and Granger, of Rochester, have dissolved partnership.

A three-story addition to the hospital at Austin is under construction.

Dr. Orrin I. Hall, of Zumbrota, died last month at the age of 65.

Dr. O. S. Leedahl, a recent graduate of Hamline, has located at Palermo, N. D.

Dr. H. G. Lamson, of Washburn, Wis., will move to Minneapolis next month.

Dr. V. E. Verne, of Parkers Prairie, has decided to locate in Minneapolis.

Dr. H. J. Huene, of Forsyth, Mont., is doing post-graduate work in Chicago.

Dr. Thomas Arneson, of Cumberland, Wis., has moved to Kennedy, in this state.

Dr. W. C. Nolte, of Dazey, N. D., has been doing post-graduate work in Chicago.

Dr. R. R. Stevenson, of Sioux Falls, S. D., is studying in Europe, mainly at Zurich.

The corner-stone of the Deaconess' Hospital at Northwood, N. D., was laid on July 7th.

Dr. D. F. Dumas, of Cass Lake, was married last month to a young lady of that village.

Dr. J. C. Jacobs, of Spicer, State University, '05, was married at Willmar last month.

Dr. M. L. Strathern, of St. Paul, has gone to Europe for six months' post-graduate work.

Dr. D. A. Baker, of Bowman, N. D., was married last month to Miss Ollie Clark, of Denver, Ill.

Dr. F. F. Clifford, of West Concord, has been appointed a member of the State Board of Health.

Dr. Henry T. McGuigan, of Mazeppa, was married last month to Miss Katherine Zender, of Austin.

Dr. F. F. Rucker, of Mott, N. D., was married last month to Miss Hattie Mae Johnson, of Dickinson, N. D.

Dr. Edwin H. Maercklein, of Ashley, N. D., was married last month to Miss Ella Johnson, of Ashley.

Drs. Lester and Dougherty, of Wabasha, have dissolved partnership. Dr. Lester will move to Princeton.

Dr. Joseph R. Kuth, of Duluth, was married last month to Miss Katherine Fiebigler, of the same city.

Two children lost their lives in South Dakota in June as the result of eating tablets left within their reach.

Dr. O. J. Veline, of Minneapolis, was married last month to Miss Hazel L. Niederkorn, of Farmington.

Dr. W. C. Chambers has moved from Ceylon to Blue Earth, where he has accepted a position in the hospital.

Dr. A. S. Backus, of Wales, N. D., was married last week to Miss Eva Maud Brown, of Toronto, Canada.

Dr. A. A. Heusser, of Chicago, has been appointed to a position on the staff of the State Hospital at St. Peter.

Dr. J. W. Stribling, of Dickinson, N. D., was married last month to Miss Frances Archibald, of Jamestown, N. D.

Dr. W. E. Ground, of Superior, Wis., has opened offices in Duluth for consultation work in surgery and gynecology.

Dr. A. R. Sorenson, of Barton, N. D., was married last month to Miss Agatha A. Swarstad, of Thompson, N. D.

Dr. B. O. Mork, formerly of Hills, has located at Worthington, and entered into partnership with Dr. Henry Wiedow.

Dr. S. S. Blacklock, of Hibbing, has gone to Europe, where he will remain several months in special post-graduate work.

Dr. J. L. Holmberg, of Cashton, Wis., has moved to Canby, and will occupy the offices of the late Dr. O. H. Huthins.

Dr. C. L. Greene, of St. Paul, will read a paper before the Anti-Tuberculosis Congress which meets in Washington in September.

Dr. R. T. Gould, of Red Lodge, Montana, died last month at the age of 24. Dr. Gould recently became the assistant of Dr. S. M. Souders, of Red Lodge.

Dr. Frederick L. Smith, State University, '06, was married last month to Miss Stella W. Greene, of Minneapolis. Dr. Smith has located at Chatfield.

Dr. George D. Edward has moved from Brookings, S. D., to Bruce, where he takes the practice of Dr. Kenney, who will locate in the western part of the state.

Dr. Horace Newhart, of Minneapolis, will spend three months in Europe in ear, nose, and throat work. Most of the time will be spent in Vienna, Berlin, and Freiburg.

A news item in our last issue was not correct in detail, and was also subject to misunderstanding. The information intended is as follows: Dr. G. H. Shroeder, who practiced for a number of years in Minneapolis and at Excelsior, and then went to California for his health, has become a partner of Dr. Gammell of Madison, both in the latter's general and hospital work.

The thirteenth annual meeting of the Sioux Valley Medical Association of South Dakota met at Sioux Falls, S. D., on June 18th and 19th.

Officers for the current year were elected as follows: President, Dr. C. O. Wright, Luverne, Minn.; first vice-president, Dr. Prince Sawyer, Sioux City, Iowa; second vice-president, Dr. E. F. Reamer, Mitchell, S. D.; treasurer, Dr. S. A. Brown, Sioux Falls, S. D.; secretary, Dr. C. L. Sherman, Luverne, Minn.

FOR SALE

My practice, office fixtures, and driving outfit. Only physician in a town of 500 in Central Minnesota. Good territory, Americans and Germans. Want to take post-graduate work. Address G. B., care of this office.

PRACTICE FOR SALE

I have an offer to go in with a big mining company as surgeon, and will sell all or part of a \$6,000 to \$7,000 cash practice and well-equipped hospital, with transferable contracts. Easy practice, easy money, lots of surgery. Small cash payment, and all the time you need. City of 8,000 in northern Minnesota. Act quickly. Address, S. C., care of this office.

TO THE PROFESSION—X-RAY LABORATORY

I have a well equipped x-ray laboratory, rooms 214-218 American National Bank Building, corner Fifth and Cedar streets, and am prepared to do your radiographic or Roentgen-ray therapeutic work.—W. S. Fullerton, M. D., St. Paul, Minn.

PHYSICIANS' ATTENTION.—Drug-stores on easy payments, etc. Drug-store positions, United States or Canada. F. V. Knies, Omaha, Nebr.

PARTNER WANTED

A man who will be satisfied with honest work and a fair income, Norwegian preferred. Address G. M., care of this office.

DARWINISM AND DIABETES

R. C. Eccles, of Brooklyn, believes that we should look at the problem of diabetes and its treatment from the standpoint of enlightened Darwinism. The struggle for existence must be waged against disease and privation. The organism as we see it is the survival of all that is best physiologically. If, then, we find nature carrying out one system of defense in any disease we should look at that fact as an indication that that method is nature's method of defense. In diabetes, no matter what diet we allow, sugar is still formed by the organism. Even when carbohydrates are entirely cut off, sugar is manufactured out of the proteids, and when these fail, out of the tissue cells. This should be to us an indication that this production of sugar is a means of defense against some unknown disease cause. We should not deprive the system of the carbohydrates, but should allow a natural and normal diet. To deprive the patient of carbohydrates is an illogical measure. We are fighting against nature's method of cure. So much sugar is not made to be wasted. Deprivation of carbohydrates means starvation and hastening of the patient's death. In countries where no meat is eaten and where much sugar is consumed diabetes is absent, and in meat-eating countries it is on the increase.—Medical Record.

REPORTED FROM STATE INSTITUTIONS FOR MONTH OF MARCH, 1908

STATE INSTITUTIONS.	Total Deaths												
	Tuberculosis of Lungs	Other Forms of Tuberculosis	Pneumonia	Bronchitis	Diphtheria	Scarlet Fever	Measles	Smallpox	Whooping Cough	Cerebrospinal Meningitis	Typhoid Fever	Diarrheal Diseases of Children	Fuerial Septicemia
Fergus Falls, Hospital for Insane.....	7	4	1	1	1	1	1	1	1	1	1	1	1
Rochester, Hospital for Insane.....	12	2	1	1	1	1	1	1	1	1	1	1	1
St. Peter, Hospital for Insane.....	11	1	1	1	1	1	1	1	1	1	1	1	1
Anoka, Asylum.....	0	1	1	1	1	1	1	1	1	1	1	1	1
Hastings, Asylum.....	0	1	1	1	1	1	1	1	1	1	1	1	1
Paribault, School for Deaf.....	0	1	1	1	1	1	1	1	1	1	1	1	1
Paribault, School for Blind.....	0	1	1	1	1	1	1	1	1	1	1	1	1
Paribault, School for Feeble Minded.....	0	2	1	1	1	1	1	1	1	1	1	1	1
Owatonna, School for Dependents.....	0	1	1	1	1	1	1	1	1	1	1	1	1
Stillwater, State Prison.....	0	1	1	1	1	1	1	1	1	1	1	1	1
St. Cloud, State Reformatory.....	0	1	1	1	1	1	1	1	1	1	1	1	1
Red Wing, State Training School.....	0	1	1	1	1	1	1	1	1	1	1	1	1
Minneapolis, Soldiers' Home.....	2	1	1	1	1	1	1	1	1	1	1	1	1
Totals.....	37	9	1	1	1	1	1	1	1	1	1	1	1

REPORTED FROM 72 CITIES HAVING A POPULATION OF 1,000 OR UPWARD
FOR THE MONTH OF MARCH, 1908

CITIES	Population of U. S. Census of 1900	Population of State Census of 1905	Total Deaths	Tuberculosis of Lungs	Other Forms of Tuberculosis	Pneumonia	Bronchitis	Diphtheria	Scarlet Fever	Measles	Smallpox	Whooping Cough	Cerebrospinal Meningitis	Typhoid Fever	Diarrheal Dis- eases of Child- ren	Puerperal Septicemia	Cancer
Albert Lea.....	4,500	5,657	7	1													
Anoka.....	3,769	4,053	4	1													
Austin.....	5,474	6,489	9	1		2		1									
Barnesville.....	1,326	1,566	*														
Bemidji.....	2,183	3,800	4												1		
Blue Earth.....	2,900	2,364	2														
Brainerd.....	7,524	8,113	18	2	1	2		2								1	1
Chaska.....	2,165	2,085	3														
Chatfield.....	1,426	1,300	2			1											
Cloquet.....	3,074	6,117	4					1									1
Crookston.....	5,359	6,794	5			3									1		
Detroit.....	2,060	2,149	6			1											
Duluth.....	52,968	64,942	73	9	2	7	1	3		1	1		1	1			4
E. Grand Forks.....	2,077	2,487	0														
Ely.....	3,712	4,045	3														
Eveleth.....	2,752	5,332	6			1											
Faribault.....	7,868	8,279	8			1											1
Fairmont.....	3,440	2,955	3														
Fergus Falls.....	6,072	6,692	5	1													
Granite Falls.....	1,214	1,340	*														
Hastings.....	3,811	3,810	5		1												
Hutchinson.....	2,495	2,489	1														1
Jordan.....	1,270	1,311	3			1											
Lake City.....	2,744	2,877	3			1											
Litchfield.....	2,280	2,415	1														
Little Falls.....	5,774	5,856	7			1											
Luverne.....	2,223	2,272	2	2													
Le Sueur.....	1,937	1,842	2	1													1
Madison.....	1,336	1,604	0														
Mankato.....	10,559	10,996	14	1		2			1								3
Marshall.....	2,088	2,243	*														
Melrose.....	1,768	2,151	1														
Minneapolis.....	202,718	261,974	262	22	4	46	3	7	3	2	1	1	1	4	8		16
Montgomery.....	979	1,281	1														
Montevideo.....	2,146	2,595	1														
Moorhead.....	3,730	4,794	3														
Morris.....	1,934	2,003	0														
New Prague.....	1,228	1,419	0														
New Ulm.....	5,403	5,720	7	1													
Northfield.....	3,210	3,438	6			1							1				
Ortonville.....	1,247	1,612	1														
Owatonna.....	5,561	5,651	4														
Pipestone.....	2,536	2,885	1			1											
Red Lake Falls.....	1,885	1,797	0														
Red Wing.....	7,525	8,149	16	1				1								1	
Redwood Falls.....	1,661	1,806	3		1												
Renville.....	1,075	1,229	0														
Rochester.....	6,843	7,233	13			1											4
Rushford.....	1,100	1,133	0														
St. Charles.....	1,304	1,238	1														
St. Cloud.....	8,663	9,422	14		2			1							1	1	2
St. James.....	2,607	2,320	1														
St. Paul.....	163,632	197,323	222	17	7	23	3	5	2			1	1	2	6	4	16
St. Peter.....	4,302	4,514	5														
Sauk Centre.....	2,220	2,463	2														
Shakopee.....	2,046	2,069	0														
Sleepy Eye.....	2,046	2,312	4	1		1											
So. St. Paul.....	2,322	3,458	8			1						3	1				1
Stillwater.....	12,318	12,435	10			1		1								1	1
Thief River Falls.....	1,819	3,502	0														
Tower.....	1,366	1,340	0														
Tracy.....	1,911	2,015	2														
Virginia.....	2,962	6,056	7			3			1								
Wabasha.....	2,528	2,619	5			1											2
Warren.....	1,276	1,640	1														
Waseca.....	3,103	2,838	4	1													
Waterville.....	1,260	1,383	2	1											1		
West St. Paul.....	1,830	2,100	2														1
Willmar.....	3,409	4,040	3		1												
Windom.....	1,944	1,884	3			1											
Winona.....	19,714	20,334	17	1		3							1	1			
Worthington.....	2,386	2,276	3		1												

THE JOURNAL OF THE MINNESOTA STATE MEDICAL
REPORTED FROM 65 VILLAGES HAVING A POPULATION OF 1,000 OR UPWARD
FOR THE MONTH OF MARCH, 1908

VILLAGES	Population of U. S. Census of 1900	Population of State Census of 1905	Total Deaths	Tuberculosis of Lungs	Other Forms of Tuberculosis	Pneumonia	Bronchitis	Diphtheria	Scarlet Fever	Measles	Smallpox	Whooping Cough	Cerebrospinal Meningitis	Typhoid Fever	Diarrheal Dis- eases of Children	Puerperal Septicemia	Cancer
Ada.....	1,253	1,515	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Adrian.....	1,258	1,184	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Aitkin.....	1,719	1,896	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Akeley.....		1,636	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Alexandria.....	2,681	3,051	0	1	..	..	..	..	..	..	..	..	..	..	..	..	..
Appleton.....	1,184	1,321	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Belle Plaine.....	1,121	1,301	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Benson.....	1,525	1,766	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Breckenridge.....	1,282	1,850	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Buffalo.....	1,040	1,124	3	1	..	..	..	..	..	..	..	..	..	..	..	..	..
Caledonia.....	1,175	1,405	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Canby.....	1,100	1,505	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cannon Falls.....	1,239	1,460	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cass Lake.....	546	1,062	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Chisholm.....		4,231	10	..	..	..	..	1	3	..	..	..	1	..	..	..	..
Clayton.....	962	1,056	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Delano.....	967	1,023	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Fosston.....	864	1,000	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Frazee.....	1,000	1,146	5	1	..	..	..	..	..	..	..	..	..	..	..	..	..
Glencoe.....	1,780	1,805	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Glenwood.....	1,116	1,718	2	..	1	..	..	..	..	..	..	..	..	..	..	..	1
Graceville.....	856	1,032	5	..	..	3	..	..	..	..	..	..	..	..	..	..	..
Grand Rapids.....	1,428	2,055	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Hallock.....	805	1,014	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..
Hibbing.....	2,481	6,566	14	..	..	2	1	..	..	..	..	..	..	..	..	..	..
Jackson.....	1,756	1,776	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Janesville.....	1,254	1,205	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Kasson.....	1,112	1,049	4	1	..	..	..	..	..	..	..	..	..	..	..	..	..
Kenyon.....	1,202	1,252	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Lake Crystal.....	1,215	1,231	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Lanesboro.....	1,102	1,041	3	..	..	..	..	1	..	..	..	..	..	..	..	..	..
Long Prairie.....	1,385	1,256	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Madelia.....	1,272	1,290	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Milaca.....	1,204	1,319	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Mountain Lake.....	959	1,063	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..
North Mankato.....	939	1,129	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
North St. Paul.....	1,110	1,400	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Olivia.....	970	1,019	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Osakis.....	917	1,056	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Park Rapids.....	1,313	1,719	2	..	..	1	..	..	..	..	..	..	..	..	..	..	..
Pelican Rapids.....	1,033	1,095	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Perham.....	1,182	1,366	7	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Pine City.....	993	1,092	2	..	..	..	..	1	..	..	..	..	..	..	..	..	..
Plainview.....	1,038	1,140	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Preston.....	1,278	1,320	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Princeton.....	1,319	1,704	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Rush City.....	987	1,041	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Rushford.....	1,062	1,040	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
St. Louis Park.....	1,325	1,491	2	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Sandstone.....	1,189	1,589	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Sauk Rapids.....	1,391	1,552	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..
Scanlon.....		1,122	2	1	..	..	..	..	..	..	..	..	..	..	..	..	..
South Stillwater.....	1,422	1,572	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Springfield.....	1,511	1,546	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Spring Valley.....	1,770	1,573	3	..	..	1	..	..	..	..	..	..	..	..	..	1	..
Staples.....	1,504	2,163	1	..	..	..	..	..	..	..	1	..	..	..	..	..	..
Two Harbors.....	3,278	4,402	7	2	2	..	..	..	..	..	..	..	..	..	..	..	..
Wadena.....	1,520	1,868	2	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Wells.....	2,017	1,814	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
West Minneapolis.....	2,250	2,530	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..
Wheaton.....	1,132	1,346	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
White Bear Lake.....	1,288	1,724	2	1	..	..	..	..	..	..	..	..	..	..	..	..	..
Winnebago City.....	1,816	1,553	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Winthrop.....	813	1,031	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Zumbrota.....	1,119	1,129	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
State Institutions.....			37	9	1	1	1	1	..	..	..	..	..	1	..	..	..
Other parts of State.....	1,012,328	1,085,886	969	52	11	77	14	13	14	3	..	6	4	6	7	15	31
Total for State.....	1,751,395	1,979,658	1951	133	35	193	23	41	21	7	4	11	12	20	25	22	89

Still births and premature births, 95 (not included in above totals).

*No report received Health officer not doing his duty

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DISEASES OF THE CEREBRAL VESSELS, WITH ITS PROBLEM IN DIAGNOSIS*

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MINNEAPOLIS

Diseases of the arterial system in the brain often give rise to a misleading and confusing chain of clinical symptoms.

Not infrequently these symptoms are almost identical with those of well-known diseases, such as tumors, abscesses, cysts, and hemorrhages. The diagnosis is, therefore, empirical or impossible, particularly if no gross evidences of disease are found in accessible or palpable vessels.

Changes in the vessel wall may be dependent on a defective development of the media, which leads to aneurismal pouches, minute, moderate, or large. Atrophy, inflammation, or degeneration follows wasting disease. Acute arteritis from infective processes or intoxications, extensions of disease, septic or otherwise, from adjacent structures, and from external injuries, have been clearly demonstrated by bacteriologic and histologic investigations. Thrombo-arteritis, in which the brunt of the attack is sustained by the intima and media, may result in the organization of a thrombus and the partial or complete obliteration of the vessel lumen. Arteriosclerosis, a circumscribed or diffuse thickening of the arterial walls, especially of the intima, secondary to certain inflammatory or degenerative changes in the media, covers such a broad field and is so well appreciated that further description is unnecessary.

The following cases represent a form of vessel

disease in which there are fairly well-defined focal manifestations, which might easily fall under the head of brain tumor or other gross disease, and yet do not represent the ordinarily recognized forms of cerebral arteriosclerosis. These cases also illustrate disease of the arteries of the brain without other marked evidences of general vessel degeneration.

CASE I.—L. W. R., male, aged 45, married, telegrapher.

Family History.—Father died of bronchitis at 48; mother died of old age at 77. One brother and one sister are living and well. One sister is dead; cause unknown. Two sons and a daughter are living and well, except that all are somewhat nervous.

Personal History.—General health is fair. He can not recall any severe illness. He had gonorrhea years ago; syphilis, he denied. He had been twice married; neither wife had any miscarriages. Twenty years ago, the patient fell, striking his spine, and sustained some sort of injury, which necessitated his being kept in bed in a prone position for ten weeks. There was apparently a complete recovery.

Present Disease.—Ten years ago he began to have jerking in his legs at night with occasional cramps. This condition grew worse, and seven years ago his arms also began to jerk, but after a time he improved in this respect, and his upper extremities are no longer affected, though he still has slight jerking in his legs, both day and night. About ten years ago he also began to lose the power of hearing in the left ear, and at the end of two years the loss was complete. A few months later, hearing in the right ear became dull, but he was still able to continue his work as a telegrapher until one morning he awoke to find himself absolutely deaf. From that time till two years ago, he did clerical work. Ever since his deafness appeared he has had

*Read in the Section on Nervous and Mental Diseases of the American Medical Association, Chicago, June, 1908.

noises in his head. There is constantly present a sound as of singing insects, and, in addition, there is at times a roaring like the fall of water, sometimes near, again far away, and at times there is a noise like that of the intermittent tooting of an automobile horn sometimes high and sometimes low in pitch. This latter sound occurs only when he is nervous or worried. Sexual power has been weak for six years, and for the last year wholly gone. Two years ago he lost control of his bowels and bladder. After a time, this was regained, but is now again lost. During the last five years he has had attacks of dizziness from time to time, possibly due to digestive disturbances. When he becomes dizzy, he is also nauseated unless he assumes a recumbent posture. If he lies down, the nausea goes away, and if he closes his eyes, the dizziness also disappears. During the week before consulting me he had always been dizzy when rising from a recumbent posture. Four years ago he began to shuffle his feet when walking, and of late his gait is decidedly staggering. He still writes fairly well, but at times his hand jerks and the pen drops. He is confined to the bed and a chair practically all the time.

Physical Examination.—He is a medium-sized man, fairly well developed and nourished; skin, healthy in appearance; muscles small. Temperature, 98.6 F.; pulse, 64, regular and normal in volume. Examination of heart and lungs is entirely negative. Radial and temporal arteries are soft. Abdominal organs are normal except for a considerable amount of gas in the stomach and intestines.

Urine: Clear, dark amber, strongly acid; specific gravity, 1.028; trace of albumin; no sugar; cylindroids and considerable mucus.

He complains of vertigo when he first rises, and says this is not worse when it is dark. He has an occasional slight headache—never any that is severe; no tenderness about the head. The eyes are deep set. There is no conjunctivitis, ptosis, lagophthalmos, nystagmus, or strabismus. Vision is fair. Examination of the ears is negative, except that he is absolutely deaf. Taste and smell are normal. No disturbance of cutaneous sensibility for touch, pressure, pain, or temperature can be demonstrated. The patellar reflexes are both increased; no ankle clonus. Marked Romberg sign is present with moderate ataxia in the hands; no Babinski sign. The muscles are all small. Those of the upper extremities are soft and flabby; those of the lower limbs are spastic; no atrophies; no fibrillary twitchings. He walks with a distinctly spastic, staggering gait.

Mental Condition.—His expression is sad but intelligent, and he has no peculiarities of dress or attitude. He is oriented as to time, place, and surroundings, comprehends what is said to him and answers relevantly. His memory is good. He is evidently much depressed and worries a great deal because he is unable to get about. At times he is extremely irritable; no hallucinations or delusions.

Course of Disease.—Oct. 26, 1907: He has been failing since last note. He says that he is losing flesh, and that the power in his right hand is failing, though examination does not confirm the latter statement. Suffers severely from constipation and passes a limited amount of urine. His feet and legs become cyanotic and swollen if held in a dependent position. Almost ever since the last note, he has had a free flow of saliva, which, if swallowed, causes vomiting. He has a bitter taste in

his mouth and has a constant feeling of distention and slight pain in his stomach. Taking food relieves this for a short time, but afterward seems to make it worse. Teeth are not tender, and gums are perfectly normal. Right pupil is a little larger than the left; both react normally for distance but sluggishly for light. Patellar reflexes are increased; no ankle clonus. He thinks that his eyesight is worse, and he is sure that he does not see so well during the dizzy spells as at other times. He says that he suffers greatly from mental distress.

Nov. 14, 1907: Much of the time the patient is extremely irritable and depressed. He walks with increasing difficulty and thinks that his eyesight is failing. He has no headache. The flow of saliva decreased for a time, but is again excessive.

Nov. 18, 1907: Dr. William R. Murray examined his eyes to-day and reported: "Lids and external ocular muscles normal. Cornea normal. Iris normal; reacts to light and convergence. Crystalline lens normal. Optic discs normal (lamina cribrosa prominent). Retinal arteries slightly contracted and pale; otherwise normal. Fundi show no pathologic changes. Visual fields (roughly) appear normal. Vision (R. and L.) for distance good. Reads fine print at ten inches. Examination of eyes negative."

Dec. 13, 1907: The man constantly complains of being weak; can not sit up except for short periods; he scarcely ever suffers from vertigo now. He has no pain except an occasional slight headache. Expression is bright. Sensibility to pressure and pain are about normal in upper part of body, but distinctly impaired in the legs and lower abdomen. Deep reflexes in the upper extremities are about normal, but are much increased in the legs. There is more or less spasticity everywhere, but especially in the lower extremities. No ankle or patellar clonus. No fibrillary twitching is noted; no contractures. There is no atrophy of tongue. He is still spitting very freely.

May 27, 1908: The man is in practically the same condition except that his ataxia is greater.

CASE 2.—Male, aged 48, married, train dispatcher, was seen June 14, 1907.

Family History.—Father died at 66 of kidney trouble; he had been a heavy drinker. Mother is living at 76 and well. One brother died of dysentery, and one brother drinks to excess. The maternal grandfather died of paralysis. There is no other nervous or mental trouble in the family.

Personal History.—General health in early life was fair. He had typhoid in childhood and gonorrhea at 17. Syphilis was denied. He was very ill with mountain fever twenty-four years ago. At different times he had a number of abscesses. He drank some every day, but rarely to the extent of being intoxicated. He used tobacco to excess habitually, his cigar bill amounting to \$35 a month. He was married at 22. His wife has never been pregnant. He has never been injured.

Present Illness.—About twenty-four years ago, when excited over a little family trouble, he had an attack of jerking of all the muscles, lasting one-half hour. A second similar attack, only more severe, occurred seven years ago, and again during a family quarrel. It lasted one hour, and was not accompanied by unconsciousness. He did not fall, but was lying down at the time. For the last sixteen years he has been failing in health, and fourteen years ago he noticed some unsteadiness in gait. This latter has gradually grown worse since. Sixteen

years ago he first complained of the wind and the pillows hurting his ears, and not long after that he began to slowly lose his hearing. The explosion of a cannon-cracker is thought by the family to have hastened the latter. The trouble began in the right ear, and eight years ago the left also began to be affected. Eighteen months ago, the right ear had become absolutely deaf and eleven months ago he suddenly lost hearing completely in the left ear, the change occurring within a few hours. From the outset of his ear trouble, he was greatly bothered by noises in his ears, a constant roaring with intervals of the sound of blowing whistles and the tooting of engines. These have continued ever since. On one occasion, since he became deaf, his wife dropped her scissors and made considerable noise. He threw down the paper which he was reading, said he must have dropped his knife and began searching for it. He also said that at times, when holding his watch in hand, he could hear it ticking. His ataxia is now so great that he walks only with the assistance of a cane and, even then, with a distinctly staggering gait. His sexual power has been failing for sixteen years, and for one and one-half years he has been entirely impotent. He is much constipated and for several years has often gone from seven to ten days without a bowel movement. For the past year there has been some loss of bowel control. Four years ago his urine began to dribble at the end of urination, and for three years he has had no control whatever of his bladder. There has been a tremor of the hands for years, but not of such extent as to interfere with his writing until recently. About four years ago he had some attacks when his head would fall to one side or the other, and he would be unable to control it. These were of very short duration. He has had lumbar pain at times, but no headache. He always has vertigo if he moves suddenly, and frequently at other times also. He sleeps fairly well, but often talks in his sleep, and sometimes very loudly. He is a little more querulous and nervous of late, but there was no distinct mental change previously.

Physical Examination.—He is a rather large man, fairly well developed and well nourished. Muscles are of fair size but flabby. Temperature 98.4 F.; pulse, 80, and of normal quality. Lung examination is entirely negative. He has no cough. Apex beat of heart is slightly outside the normal line; no murmurs. There is a moderate degree of thickening of the radial and temporal arteries. Abdominal organs are apparently healthy. Sexual apparatus is normal.

Urine: Clear, amber, acid; specific gravity, 1.024; no albumin; no sugar. Microscopic examination is negative.

He has an anxious, worried expression; does not complain of pain. Eyes are bright; both lids droop slightly and equally; there is moderate arcus senilis. There are no ocular palsies; no double vision; no nystagmus. Pupils are equal and react sluggishly to light, fairly well as to distance. Vision is good. Ophthalmoscopic examination is negative. He is absolutely deaf. Taste is normal, but smell is very much impaired, possibly on account of a prolonged condition of catarrh. There is no disturbance of sensibility to touch, pressure, or pain. The deep reflexes of the arms are increased, and of the legs very much increased; no ankle clonus. Babinski sign is uncertain. Abdominal and cremasteric reflexes are normal. There is a fairly well-marked

tremor of the extended fingers; no paresis or paralysis of the face or extremities.

Course of Disease.—At the time of his examination he was advised to go to a hospital, but he declined to do so and remained for four days at a hotel. On July 8, while sitting at dinner, he suddenly became unusually dizzy. With assistance he was able to get to his room where he lay down on the bed. Shortly after he began to scream loudly and continued this for some time, but when seen one hour later he was lying in bed in a stuporous condition. He was transferred to the hospital where his temperature was found to be 98.2 and his pulse 84. The next morning the following conditions were noted:

He is conscious, but has a dull, heavy look and responds slowly to whatever is said or done. Is distinctly emotional. When questioned as to his experience of the preceding day, he says that while seated at the table he experienced an unusual sensation in his head. This became gradually more pronounced and he feared that he would die. Says he screamed in order to obtain help. He can not describe the sensation in his head other than to say that it seemed like an "unusual commotion." His temperature has ranged from 99.6 to 102.2 F., and his pulse from 100 to 110. There is some paresis of the left face, including a distinct drooping of the left lid. He appreciates touch in the left face but not the pricking of a pin. Tongue can be protruded straight. There is nystagmus of vestibular type with quick component upward and to left. Vision is very bad, probably on account of nystagmus. He has a constant sense of dizziness even in the recumbent posture. There is no ocular palsy. He can not swallow, and there is no movement of the throat on the left side. Deafness is complete. Apparently there is no disturbance of sensation in arms or body. There is possibly numbness in the right leg. Both knee jerks are exaggerated; double ankle clonus; no Babinski sign.

July 10, 1907: He has been failing since yesterday. Temperature dropped from 103.2 to 100 F., and pulse from 132 to 106. Nystagmus continues with some tendency to a rotary movement. He is very dizzy. Pupils react to accommodation and slightly to light. There are no ocular palsies. Left face is still numb and shows some motor impairment. He can not swallow and there is no movement of the left side of the throat. Left hand is very ataxic. No abdominal or cremasteric reflex is obtainable. Both knee jerks are exaggerated and right leg is rigid. Ankle clonus is present on the left side; no Babinski sign. He is unable to retain urine. He complains of no pain except slight backache. He died at fifteen minutes past midnight.

Autopsy.—The postmortem was made the next day at noon.

Macroscopic Appearance: There are some adhesions at the apex of the right lung. Both lungs are congested and edematous and the bronchi are full of mucus. There is a beginning pneumonia in the left lower lobe. Heart is moderately enlarged. There is an old endocarditis and a moderate degree of atheroma of the aorta. Liver is normal. Spleen is soft. Left kidney is normal in appearance. The right kidney shows marked atrophy and hydronephrosis. The ureter also is enlarged, but shows no constriction at any point, and there is no indication of distension of the bladder. Prostate is normal. The calvarium is very thick, especially anteriorly. Dura is not adherent; the pia-arach-

noid is thickened and opaque, especially along the larger vessels, but is not adherent. There is no atrophy of the brain substance. Ependyma is normal. All the large vessels at the base of the brain are very much diseased; they are increased in diameter; the walls, except in the region of the aneurismal dilatation, are much thickened and show many patches of distinct nodular sclerosis. The basilar artery is almost uniformly distended and measures a little over 1 cm. in diameter. Its walls are thin and almost translucent, except at a few small points. The left vertebral artery is moderately enlarged; the right is greatly enlarged, and at the point of junction with the left measures 0.8 cm. in diameter. The right inferior cerebellar artery has three distinct saccular aneurisms in its course, the largest measuring 0.7 cm. in diameter. The left inferior cerebellar artery has one small saccular aneurism and one rather fusiform aneurism, the latter measuring 1.5 cm. in its greatest diameter. This entire vessel and its branches for some distance are completely obstructed by blood clots. There is a well-marked extravasation of blood into the pia-arachnoid in the region of distribution of this vessel. The left anterior cerebellar is very small and not aneurismal; the right, also small, is not dilated. The right and left posterior cerebral arteries are very much sclerosed, the left having two small saccular aneurisms, and the right one aneurism. All the other vessels at the base are very much thickened, and at points show irregular dilatation, but none has any distinct aneurismal formation.

Microscopic Examination: On section and microscopic examination of the vessels the intima is found greatly thickened in places, with well-marked areas of degeneration. There is very little elastic tissue in the intima. The media in many places is thin, and this is particularly true in the region of the aneurisms, where it is almost wholly absent. The elastic tissue of the media is much broken up, and there is also well-marked round-cell infiltration of this coat, as well as of the adventitia. The thrombus is infiltrated with leucocytes. Section of small vessels from the cortex shows the ordinary changes of arteriosclerosis rather well marked.

CASE 3.—Male, aged 48, married, farmer, referred to me by Drs. Kilbride and Kelly of Canby, Minn.; was seen Dec. 16, 1907.

Family History.—Father died at 75 of paralysis; he had been temperate. Mother is living and well at 78. One brother died of nephritis at 40; one sister of tuberculosis and one sister of tuberculosis and nephritis. Four brothers and two sisters are living and well. The patient is married and has had six children, one of whom died in infancy; the others are well. There is no nervous or mental trouble in the family.

Personal History.—He was sickly in infancy, but after that period his general health was very good. He can not recall any severe illness at any time in his life. He has had occasional light attacks of rheumatism. Venereal diseases he denied. He has been temperate in the use of alcohol. Fifteen years ago he had a fracture of the right leg, which healed readily.

Present Disease.—Apparently he was perfectly well up to six months ago. At that time was working in the field and struck his left hand, just above the knuckle of the forefinger, with a wrench. The injury was slight, causing a moderate flow of blood, but no great pain. He continued at his work for a time, but at noon, when washing away the blood from the hand,

he noticed a twitching of the first two fingers. This was slight, but not under his control. For three weeks longer he continued at his farm work, and during this period the twitching spread slowly to other areas. It was always worse when he was excited, and at such times appeared in parts which were entirely quiet when he was calm. The movements involved the left arm, shoulder, and neck, in the order named. Then the left foot and leg became affected, and when seen, Dec. 16, 1907, six weeks after the onset there was twitching of the whole body, but more pronounced on the left side. He walked with difficulty and could scarcely button his clothes, especially if at all excited. He said that he had had vertigo at times for the past year. He was easily confused and cried at times.

Physical Examination.—He is a medium-sized man, fairly well developed and nourished. Heart and lung examination is entirely negative, except that his pulse rate is 88. There is a moderate degree of thickening of the radial and temporal arteries. His bowels move regularly and are entirely under his control, but he can not hold his urine so long as he could formerly. Sexual power is somewhat impaired.

Urine analysis is negative.

He has a rather dull, heavy expression, and complains of being weak. He has frequent attacks of vertigo, but can not associate them with any special time or act. He says that he has no pain. There is moderate arcus senilis but no ptosis, lagophthalmos, nystagmus, or strabismus. Vision is good with the aid of glasses. Examination of eye-grounds is negative. There is no defect of hearing and he has no subjective sounds. Sensation for touch, pressure, pain, heat, and cold is normal in all parts of the body. The patellar and Achilles reflexes are increased on both sides, but more so on the left. Ankle clonus is present on left side, but not on the right. There is well-marked ataxia in both upper and lower extremities, more marked on left than on right. All the muscles on the left side are spastic; there are no fibrillary twitchings. There is a constant, well-marked, fine tremor in left arm and hand, and at times this is seen in all parts of the body. It is increased by excitement or movement and is always worse on the left side. There is some incontinence of urine; none of feces.

Mental Condition.—Expression is dull and heavy. He has no peculiarities of dress or attitude. He talks but little and then only in response to questions. Is fairly well oriented as to time, place, and persons. His memory is much impaired, and he is slow to comprehend what is said to him. Often even a simple question must be repeated two or three times. His answers are only fairly relevant. He realizes that he is ill, but has no real insight into his mental condition. There are no delusions, illusions or hallucinations.

Course of Disease.—He was sent to the hospital and placed in bed. The next day his movements seemed about the same as when first examined, but the spasticity on the left side had increased and at times was much worse than at others. Occasionally he was restless, and, in an aimless sort of way, kept trying to get out of bed. His temperature was normal, but the pulse ranged from 72 to 96. There was involuntary urination. Two days after admission he had two convulsive seizures, the first one lasting eight and the second five minutes. The movements involved the entire body, but the left side more than the right. The

next day he had another seizure of the same sort. The rigidity of the body was constant and much greater than on any other previous occasion. The left hand was tightly clenched. He swallowed with difficulty and was much more stupid. Temperature in the evening was 99.6 F.

December 20: There was not much change except that he was worse mentally, but on the following day he became partially paralyzed on the left side, and the right side became more rigid. His temperature was normal, but the pulse was 108 and weak.

December 23: He was quite unable to swallow, his stupor had increased, the paralysis on the left side was complete and the rigidity on the right side was much worse.

December 25: The following notes were made on this date: His expression is very dull. He talks little and only in whispers. Eyes are open, no ptosis or strabismus. Pupils are equal and react normally for light and distance. Tongue is dry and coated, protrudes slightly to the right. Right arm is rigid and strongly flexed, the fingers being drawn firmly into the palm. Right leg is extended and spastic, but less so than the arm. Left arm and leg are slightly spastic and almost completely paralyzed. The twitching is marked in the right hand, leg and foot; very slight in left hand and foot and, in the hand, is confined almost entirely to the thumb and forefinger. At times there is slight twitching in the right upper lip. He can move the right arm and leg but slowly and with difficulty. On the left side there are ankle clonus and greatly increased patellar reflex. On the right side there is no clonus but the patellar reflex is increased. Achilles jerk is increased on both sides. The head is distinctly drawn to the right side, though the muscles on both sides of the neck are firm. The left pectoral muscle is moderately contracted; the right firmly so. The right rectus abdominis is very firm; left flat. No abdominal reflex can be obtained on either side. Cremasteric reflex is absent on the left and slight on the right. There is involuntary passage of urine and feces. On account of his mental condition, it is impossible to determine anything as to sensibility. Pulse is weak and in the neighborhood of 120.

December 26: He was unable to swallow and was fed by nasal tube. Pulse ranged from 120 to 128, and was very weak and irregular. The right side had also become paralyzed. He was constantly in a condition of stupor. He died December 27, apparently from progressive failure of heart and respiratory action.

Postmortem Findings.—Dura is not adherent and is normal in appearance. Pia-arachnoid is thickened and very edematous in many places, not adherent to the brain. All the pial vessels are much distended with blood. The arteries at the base are thickened but uniformly so, and there are no calcareous plates. The right vertebral artery, at about the level of the first cervical nerve, shows a well-marked fusiform aneurism, 0.75 cm. in length and about 0.33 cm. in breadth. Almost directly opposite there is a sacular aneurism of the left vertebral 0.4 cm. in diameter. There is a moderate degree of atrophy of the cerebral substance in the anterior part of the brain. Section shows nothing except a general condition of hyperemia. Ependyma is smooth. On microscopic examination of the vessels there is a thickening of the intima and of the media with considerable increase of the elastic tissue.

The literature covering these specific findings is not very satisfactory.

The brain-tumor symptom-complex of arteriosclerosis is mentioned here and there by various writers, but no one author has given it his undivided attention. The majority of writers describe conditions under a general head and designate all vessel changes as arteriosclerotic.

Practically all cases reported seem to have ended by rupture of the vessel, with the usual manifestations of apoplexy. In Case 2 the patient died from obstruction of the circulation in the cerebellum and brain-stem. In Case 3 the patient died from rather uncertain causes. The most evident postmortem finding, other than the vessel changes, was edema.

Mummert¹ calls special attention to the rarity of cerebellar aneurisms.

Rindfleisch² speaks of the rarity of cases of aneurism of the basilar artery seen clinically, often symptomless until rupture occurs, and then mistaken for ordinary apoplexy. If symptoms are present during life, a diagnosis of brain tumor is most commonly made.

Saathoff³ refers to the position of the basilar artery, whereby it is frequently exposed to undue pressure from indirect injuries.

Grunwald⁴ gives considerable attention to the differential diagnosis of disease of the vessels at the base of the brain from other conditions with which it is likely to be confused.

Joseph Collins⁵ has written an exhaustive treatise on the different phases of cerebral arteriosclerosis, in which he refers to the brain-tumor symptom-complex.

Fisher and Brooks⁶ discuss the relation of arteriosclerosis to diseases of the nervous system, but do not refer to aneurisms or other gross lesions of the basal vessels.

Bramwell⁷ covers the field of intracranial aneurisms and reports cases with focal manifestations, but does not refer to cerebellar lesions or symptoms.

Barrett⁸ has contributed an excellent article on the histology of cerebral arteriosclerosis with its clinical signs.

DISCUSSION

DR. H. A. TOMLINSON, St. Peter: I have the records of about two hundred and fifty cases among the insane.

1. Beitrag zur Aetiologie der Blutungen in Pons und Kleinhirn, Diss., Greifswald, 1904.

2. Deutsch. Arch. f. klin. Med., lxxxvi, 183.

3. Deutsch. Arch. f. klin. Med., 1905, lxxxiv, 384.

4. Ueber Aneurysmen der Gehirnarterien, Diss., Greifswald, 1906.

5. New York Med. Jour., June 9, 1906.

6. Jour. Nerv. and Ment. Dis., May, 1905.

7. Clinical Lecture on Intracranial Aneurisms and Meningeal or Extracerebral Hemorrhage, Clinical Studies, 1905-6.

8. Jour. Nerv. and Ment. Dis., April, 1905.

and almost thirty others, with regard to the postmortem findings in the cerebral blood vessels. My attention has been called particularly to the significance of the interference with the egress of blood from the brain, and I find that but little attention has been paid to this aspect of the subject. In the average individual, after 35 years of age, there is some piadural adhesion at the vertex, interfering with the emptying of the pial veins. In the defective and the degenerate, the tendency is for these adhesions to extend forward, finally involving the drainage of the area of the frontal lobes particularly. On account of the peculiar arrangement of the outlet of the pial veins into the sinus, the narrowing of the lumen of this outlet is a cause of serious obstruction; while the piadural adhesions along the median fissure, and at the base, interfere with lymph drainage. Therefore, aside from the diminished blood supply, resulting from the arteriosclerosis, there are the factors of the retained waste products, and the mechanical effect of lymph accumulation in the arachnoid space.

I have been interested to note apparently different types of degeneration in the cerebral vessels; the one the usual productive periarteritis or endarteritis; and the other the not so common atrophic form of degeneration, in which there is apparent atrophy, beginning in the intima and extending to the media. This is the usual senile change, and just to the extent that it is presenile, do we find the symptoms resulting from chronic cerebral anemia; the confusion in mental effort, loss of memory and progressive muscular weakness, which disappears after a period of rest and improved metabolism, only to reappear on the resumption of active life.

I believe that there is, under certain conditions, an angioneurotic edema, involving small areas of the cortex, which gives rise to focal symptoms that disappear as suddenly as they come; also, that in the so-called uremic palsies there is a local ischemia followed by hypostasis; because, in all the cases that I have had an opportunity to observe these conditions existed in other organs or parts, and particularly in the kidneys.

DR. C. EUGENE RIGGS, St. Paul: I find in all cases that the use of the manometer is a matter of much practical importance. I remember a case of arteriosclerosis which I saw about a year ago. The patient had had a slight hemorrhage evidently, recovered from it, but complained of a great deal of dizziness and vertigo and much general distress and the indefinite symptoms which arteriosclerotics describe. The blood pressure registered 275, and then the tubing of the manometer broke, so that I could not measure the pressure further. Treatment for the relief of pressure proved efficacious. The patient is living very comfortably, but of course is still arteriosclerotic. I have had a number of cases in which much benefit has been derived by the use of the well-known remedy which we are almost inclined to disregard because of our familiarity with it, calomel. Calomel has some influence on metabolism and probably thus affects arterial tension.

The clinical picture of arteriosclerosis is very confusing. There are undoubtedly many forms of pathologic manifestations included under this name. Whether or not arteriosclerosis is due to toxemia affecting the smaller vessels and the capillaries and thus increasing the tension and after a while causing the change in the vessels, is a matter of theory perhaps, but certain it is

that in these cases if the patient is put to bed and rested, given calomel and put on a light diet, usually the blood pressure will come down, and the vertigo will be materially relieved; and it is a very common thing to find the patient going on for years without any material change. Dr. Clifford Allbutt speaks of a case which he observed for nineteen years in which there were various attacks of hyperpiesis which were relieved, after which the patient was comfortable.

DR. JULIUS GRINKER, Chicago: It is the cases which present focal symptoms which trouble us rather than the ones presenting general symptoms of arteriosclerosis. We are often confronted with these cases and are asked: "Is this a tumor, or is it cerebral arteriosclerosis?" Only recently I have been puzzled, as never before, by a case in which I was consulted as to whether or not there was a tumor of the cerebellum. The symptoms were very much like tumor symptoms, and resembled one of the cases which Dr. Jones so ably described—almost a sister case in every detail. It was very difficult to decide whether we had to deal with a tumor causing vertigo and incoördination of the cerebellar variety or a type of cerebellar arteriosclerosis. I believe that the only way we can learn something about these cases is by having as many postmortem reports as we are able to obtain, and then correlating the symptoms with the findings, because this subject needs revision and classification. The symptoms are rather vague; we are often unable to make a positive diagnosis, because cases presenting these symptoms may turn out to be neoplasm or internal hydrocephalus, or generalized arteriosclerosis or aneurismal dilatation of the arteries at the base of the brain.

DR. ARTHUR S. HAMILTON, Minneapolis: We have, of course, many cases of cerebral arteriosclerosis, but gross changes, such as were found in Dr. Jones' cases, and yet not including the well-known military aneurism, are, I think, not very common. There are a fair number of instances of aneurism of some one of the cerebral vessels on record, but they are rarely recognized until they are found postmortem. In most of the individuals a previous diagnosis of brain tumor has been made but, if no symptoms have been present during life, death, when it occurs, is usually assumed to be due to apoplexy from the ordinary causes. Very rarely, when the aneurism is large, an accurate diagnosis has been arrived at through the recognition of a bruit, but this is quite impossible when the aneurism is small. In at least one of Dr. Jones' patients the symptoms were evidently due, not to the size of the aneurism acting very much as a tumor, but to the disturbance of the circulation in important parts of the brain. Aneurism of the cerebellar vessels is particularly uncommon, probably because these vessels do not receive the full force of the blood pressure from the middle cerebrals, and because they are not often the seat of emboli which lodge and occasionally produce aneurisms behind them. Very recently I had an opportunity to examine the brain of a comparatively young woman, in whom, following the development of a very extensive vegetative endocarditis, an embolus had lodged in the right Sylvian artery and, directly below the point of lodgment, an aneurism, about the size of a pea, had developed.

DR. W. A. JONES, Minneapolis: I want to emphasize the varying degrees of disease of the vessels other than the generally accepted arteriosclerosis. It seems to me that these cases emphasize the necessity of differentiat-

ing between arteriosclerosis and other diseases of the vessels. I appreciate the very great difficulty there is in making a positive diagnosis in any of these cases. The blood pressure in these cases is not great—in fact, it is often either normal or below normal. I do not know whether it would be helpful or not to take the blood pressure. It may be that that was improperly omitted.

The venous return to which Dr. Tomlinson refers is a very natural sequence of the condition of the blood vessels that we found in these cases; and the obliteration or the simple subsidence of what was formerly a vessel would of necessity give rise to great changes in the cerebral circulation.

TUBERCULIN IN THE TREATMENT OF PULMONARY TUBERCULOSIS

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MINNEAPOLIS

In a paper read at the tenth international congress at Berlin, in 1890, Robert Koch advocated the use of tuberculin in the treatment of tuberculosis. He based his claim for the curative action of this substance upon the effect produced when tuberculous guinea-pigs were injected with tuberculin. Koch observed that if a guinea-pig were inoculated under the skin with a virulent culture of the tubercle bacillus the animal first developed a local ulcer at the site of the injection. This ulcer refused to heal, a general tuberculosis finally resulted, and the animal died in about eleven weeks, following the inoculation. If, however, a guinea-pig so injected was treated with repeated doses of tuberculin, the local ulcer healed over, a circumstance which never happened in the untreated cases: the animal lived much longer than those untreated; and some of the treated animals recovered. Kitasato (*Zeitschrift f. Hygiene u. Infectionen Krankheiten*, August 30, 1893) repeated Koch's experiments with fifty guinea-pigs and confirmed in the main his results. He found that the lives of the guinea-pigs inoculated were prolonged when treated with tuberculin, and that better results were obtained with tuberculin than with any other material or combination of materials which he used. He observed that the greater the period of time which elapsed between the date the tubercle bacilli were injected and the beginning of the treatment the shorter was the life of the animal; that the best results were obtained when the injections of tuberculin were begun the second week after the inoculations; that the tuberculin had a favorable influence upon both external and internal tuberculosis of guinea-pigs, more especially tuberculosis of the lungs; and that those animals cured of an attack of tuberculosis by tuberculin were for a time immune to a second inoculation with the

tubercle bacillus. The latter fact was also observed by Tizzoni and Centauni (*Riforma Medica*, Naples, 1891, page 284). Pfuhl (*Zeitschrift f. Hygiene u. Infectionen Krankheiten*, Vol. VII, No. 2, 1891), repeating these experiments, failed to cure inoculated guinea-pigs by the use of tuberculin, but obtained a marked prolongation of the lives of the treated animals.

Trudeau (*Transactions of the Association of American Physicians*, Vol. VII, 1892, page 88) has given us some very accurate experimental evidence upon the value of tuberculin in inoculated guinea-pigs. Twelve guinea-pigs were inoculated under the skin of the abdomen with a pure culture of tubercle bacilli grown on glycerine serum. Four were kept as controls. The remainder were treated, within two weeks of the inoculation, with injections of Koch's tuberculin, beginning at 1 mg. daily and gradually increasing the dosage to 1 cc. While all the animals died tubercular, the average life of the controls was 88 days, and of those treated with tuberculin it was 112 days.

While none of the animals were cured Trudeau was much impressed with the influence of the tuberculin upon the tubercular lesions seen at autopsy. The untreated animals showed cheesy inoculation wounds, often still open, cheesy inguinal and retroperitoneal glands, enormous spleen riddled with tubercles and cheesy areas, enlarged tubercular liver, and a moderate number of young tubercles scattered through the lungs. In animals treated with tuberculin for more than two months, on the other hand, the inoculation ulcer was healed over and covered with hair; the inguinal glands were firm, only slightly enlarged, and rarely cheesy; the spleen and liver were either moderately tubercular or of normal size and appearance, while the lungs were solid with cheesy tubercles. To sum up, in

Trudeau's words: "In the untreated animals the pathological processes are seen to be more advanced the nearer they occur to the inoculation wound, while in the treated animals the reverse usually holds true."

From these findings Trudeau came to the conclusion that the curative influence of tuberculin affects the tubercles only when once they are formed; that tuberculin is powerless to prevent the spread of the disease to neighboring organs, and that the reparative process follows in the track of the disease; and, that the disease, overcome at one point, spreads to another, and once arriving at the lungs it progresses unchecked, and death results. To further prove the correctness of his conclusions Trudeau injected tubercle bacilli into the anterior chamber of the eyes of a number of rabbits, and began immediately treatment with tuberculin. He could not prevent the appearance of tubercles upon the iris and cornea, but he was able to cause all the tubercular lesions in the eye to disappear, and in from twelve to eighteen weeks following the beginning of the treatment the rabbits' eyes seemed entirely cured. Donitz (*Deutsche med. Woch.*, November 19, 1891) observed results similar to Trudeau in his experimental work upon rabbits' eyes in tuberculosis. In a later communication (*Transactions of the Association of American Physicians*, Vol. IX, 1894, page 169) Trudeau concludes that, while the initial tubercular lesions produced in the rabbits' eyes by experimental inoculation can be healed by the use of tuberculin, there is a tendency to a relapse even in as many as from eight to twelve months following the apparent cure of the disease. He further adds that in weighing the evidence bearing upon the curative value of tuberculin it should be noted that the eyes of the inoculated, but untreated, animals were all destroyed, often many months before the relapse began to occur in the treated ones, and that the relapse lesions run a very chronic course in the treated animals.

In the light of this experimental evidence it seems fair to conclude—

1. That tuberculin when injected into tuberculous animals has a curative effect upon the lesions of the disease already existing.

2. That it possesses no power of preventing the spread of the tubercle bacilli to other tissues of the body.

3. That a transient period of immunity against re-inoculation of the tubercle bacilli follows the cure of existing lesions.

4. That the earlier the tuberculin is given

following the experimental inoculation the more pronounced is the curative effect.

As to the method by which the tuberculin produces its curative effects: most experimenters agree that the tuberculin neither possesses any germicidal power nor creates a lasting immunity, but that it produces its curative effects by inducing a local irritation about the tubercles; that the more pronounced these vascular changes the more marked the cellular infiltration and the more effective the curative process. As Trudeau points out, we have examples of the beneficial effects of artificial irritation in the cures resulting from resections of tubercular joints, even where all of the tubercular tissue cannot be removed, and in the cures of tubercular peritonitis by the traumatism of a laparotomy and the exposure of the peritoneum to the air.

Lupus especially affords a good example of the effects of tuberculin upon a local tubercular lesion. So long as the inflammatory effects of the tuberculin are pronounced, the curative process goes on and the tubercle becomes smaller and less noticeable, but when the tuberculin no longer produces a reaction in the local area the curative process ceases.

This irritation theory of the action of tuberculin is opposed by Wasserman and Bruck, who claim to have demonstrated an antituberculin in the tissues, and they view the reaction as an expression of certain changes taking place when the tuberculin comes into contact with the antituberculin. This new substance acts as a ferment on the tuberculous tissue, the fever and constitutional symptoms being caused by the absorption of the products of the digestion of the tuberculous tissue. On the other hand, Wolff and Eisner have shown that the active agent in tuberculin is the albuminous material in the tubercle bacilli, which produces no antitoxin. They maintain that the reaction is not due to tuberculin itself, but to a new toxic substance formed by the action of the lysins on the albuminous portion of the bacilli. But for this toxic substance to become active the organism must be in a state of hypersensitiveness. In normal persons there is no lysin. If repeated minimal doses of tuberculin are given to healthy persons the quantity of lysin can be increased. Such persons develop a hypersensitiveness to tuberculin and will finally react even though no tuberculous lesion exist in their bodies.

In relation to the irritation theory of the action of tuberculin, it has been claimed by some observers that tuberculin causes a dissemination of

the process. We have absolutely no proof to show that tuberculin given in the early stages of a tubercular infection produces any dissemination of the disease, but, on the other hand, the proof is abundant and absolute in experimental tuberculosis in animals and clinical experience in man that its effect is curative and that it tends to limit the tubercular process. Bearing in mind the limitation of tuberculin in the treatment of experimental tuberculosis in animals, we are in a position to anticipate the result to be derived from the treatment in human beings. We certainly cannot expect to do more for man than for tuberculosis in animals, except that the disease in its early stages as met with in men is usually a localized process and disseminates slowly, while the experimental tuberculosis of animals remains localized only for a brief time and soon establishes multiple foci of secondary infection throughout the body.

In the treatment of tuberculous patients with tuberculin one must ever bear in mind that he is dealing with a substance which has a powerful effect upon the human organism. Some patients are much more susceptible to its action than others. Some persons withstand its effects much better than others. For this reason the writer believes that, for the present at least, and until more definite rules can be laid down regarding the dosage and until some means shall be devised of standardizing the tuberculin, its use should be left in the hands of those who have had experience with its effects. Formerly, it was thought, and Koch so believed and taught, that, in order to secure the beneficial effects of the treatment, the patient must be given a dose sufficiently large to produce a well-marked reaction. This idea permeates all the early work upon the curative effects of tuberculin. We now, however, believe that the cells in and around the tubercles can be excited to increased activity by small doses, which do not cause a rise in temperature or other symptoms characteristic of a reaction. Botkin has shown that tuberculin injected into tuberculous persons causes a well-marked leucocytosis, which appears on the day after the reaction even though no temperature rise may appear. Wright and Douglas have proven that minute doses, very gradually increased, call into play the defensive forces of the organism. Trudeau has also proven that minute doses of tuberculin not sufficient to produce a reaction, when injected in rabbits with a tuberculous iritis, bring about a very appreciable and easily demonstrated response of the defensive resources of the body. It has been our en-

deavor, therefore, in treating our cases to give such small doses of the remedy as to excite the cellular activity in the involved tuberculous area without producing a general reaction. We have used the Bureau tuberculin, which is a 10 per cent solution of Koch's tuberculin, and is prepared by the Bureau of Animal Industry at Washington. It is the tuberculin used in the animal tests. The reason why we prefer it is because it can always be secured fresh. If the individual is an adult and in good condition, we begin with an initial dose of 1-100 mg. of the Bureau tuberculin, which equals 1-1,000 mg. of the old tuberculin of Koch. The patient is seen daily and the effects of the injection noted. If no reaction results we increase the dose 1-100 mg. at each injection, watching the patient for the evidence of a reaction. Our guide in increasing the dose is the weight of the patient and the absence of fever following the injection. The injections are given once a week. So long as the patient gains in weight or holds his weight we increase the dosage. If he begins losing in weight we decrease the dosage.

The constant aim of the treatment in our hands has been to increase the dosage without arousing a reaction and without in any way affecting the health of the patient, except for the better. We have not selected our cases. The chief difficulty has been to induce patients to take the treatment, because of the widespread prejudice against it both among the laity and in the profession. We have insisted that the patient shall not run a temperature of more than 100° and shall not be in an advanced stage. We have observed some advanced cases go rapidly downhill under the use of tuberculin, and its use in these cases is to be condemned under all circumstances. In giving tuberculin for diagnostic purposes we have observed some remarkable apparent cures result from one injection of the tuberculin. This is a point to be borne in mind when urging the use of tuberculin for diagnostic purposes. The writer has given tuberculin three years for therapeutic purposes. During this time thirty-eight cases have been treated; some of these have been lost track of, some have been treated too short a time to include in this report. We submit for your consideration the following notes of eighteen cases. Most of the patients depended upon what they earned for their support, and the results obtained should be measured in the light of this fact.

CASE 1.—Lizzie L., 30 years old, unmarried, servant girl.

Clinical Diagnosis.—Pulmonary tuberculosis

of both apices; bacilli in sputum. Has had forty-six injections, beginning April, 1904, and continuing at intervals to November, 1906. Weight when beginning treatment, 104 pounds; weight in November, 1906, was 108 pounds. Patient was doing well when she was taken with an attack of tubercular peritonitis in February of this year, and is now in poor health. Lung condition unchanged.

CASE 2.—Gus O., 30 years old, married, has one child, works in-doors in a creamery.

Clinical Diagnosis.—Pulmonary tuberculosis of the right lung; tubercle bacilli in the sputum. Gave 24 injections between August 17, 1904, and September 22, 1905. Continued at his work while taking his treatment. Is now in excellent health. No gain in weight. Disease completely arrested.

CASE 3.—Mrs. McK., 29 years old. Married.

Clinical Diagnosis.—Pulmonary tuberculosis of the right lung; bacilli in sputum. Was given eighteen injections between November 7, 1904, and May 22, 1905. Weight before treatment, 110½ pounds; at end of treatment, 123½ pounds. Became pregnant during treatment; injections were discontinued in the midst of her pregnancy; went rapidly down hill after child was born and died in February, 1906. Child was ill-developed and died at three months of age.

CASE 4.—Miss B., 28 years old, school teacher.

Clinical Diagnosis.—Tuberculosis of the uterus and peritoneum; chronic tubercular pleuritis of left lung. Was given eight injections of tuberculin between September 7, 1904, and November 22, 1904. Uterus was then removed; also adnexa, by operation. Peritoneum was studded with tubercles. Patient went to Arizona two months later. She writes me now that she is perfectly well.

CASE 5.—Mrs. B., 42 years old, married.

Clinical Diagnosis.—Pulmonary tuberculosis of the right apex. Moderate reaction to tuberculin. Between October 11, 1905, and the present date has been given sixty injections of tuberculin. Has gained eight pounds in weight; slight cough; no signs of active disease in lungs.

CASE 6.—Mrs. E., 48 years old, married; housewife.

Clinical Diagnosis.—Pulmonary tuberculosis of the left lung; much cough; bacilli in sputum. Between November, 1904, and December, 1906, gained in weight, and for a time did well. Later caught a severe cold and is now losing ground. Disease is in an advanced stage.

CASE 7.—Mr. S., 49 years old, optician.

Clinical Diagnosis.—Pulmonary tuberculosis of the right lung. Between April 20, 1905, and May 12, 1905, gave five injections without appreciable benefit. Died eight months later with tubercular peritonitis and tubercular laryngitis.

CASE 8.—Mr. Sh., 50 years old, bookkeeper.

Clinical Diagnosis.—Tuberculosis of base of right lung anteriorly. Between March 31, 1905, and March 17, 1906, received thirty-three injections, gaining twenty-six pounds in weight and lung signs clear. Then had a severe attack of appendicitis, and was in bed ten days, after which he received fifteen injections with a gain from 160½ to 170 pounds. Is now free from all symptoms of disease except pleural friction rub in old area.

CASE 9.—Mr. R., 30 years old, artist.

Clinical Diagnosis.—Pulmonary tuberculosis of the base of right lung. Gave six injections of tuberculin without improvement. Went South. Heard one year later that he was then in poor health.

CASE 10.—Miss P., 20 years old.

Clinical Diagnosis.—Pulmonary tuberculosis of left apex. Bacilli in sputum. Between July, 1905, and December, 1906, gave forty-seven injections with a gain in weight of twelve pounds and a disappearance of all symptoms of the disease.

CASE 11.—Miss McV., 30 years old, nurse.

Clinical Diagnosis.—Pulmonary tuberculosis of the base of the right lung. Bacilli in sputum. Between March, 1904, and January 10, 1907, gave sixty-five injections of tuberculin. Patient at first gained in weight, and the lung signs improved, but now the râles have again appeared in the old area. Her present condition is excellent.

CASE 12.—Mrs. Har., 38 years old. Married, housewife.

Clinical Diagnosis.—Pulmonary tuberculosis of right base anteriorly and apex of left lung. Bacilli in sputum. Between November 10, 1906, and April 6, 1907, have given nineteen injections. Patient has gained seventeen pounds in weight. Lung signs are clear except an occasional crackling râle in left apex. No sputum. No cough. Still under treatment.

CASE 13.—Mrs. H., 33 years old. Married, housewife.

Clinical Diagnosis.—Pulmonary tuberculosis of right lung. Bacilli in sputum. Between May 7, 1906, and October 10, 1906, gave thirteen injections. Patient never did well from the beginning of treatment. The injections were final.

ly discontinued. Patient died about five months later.

CASE 14.—Mr. A., 43 years old, married, capitalist.

Clinical Diagnosis.—Pulmonary tuberculosis of right lung. Bacilli in sputum. Between August 4, 1906, and January 3, 1907, gave eleven injections. Patient gained eight pounds in weight, but the lung signs remained unchanged. Has gone south for the winter.

CASE 15.—Mrs. A., 40 years old, married.

Clinical Diagnosis.—Pulmonary tuberculosis of upper parts of both lungs. Bacilli in sputum. Between August 10, 1906, and February 8, 1907, gave thirty injections. Patient gained in weight and lung signs cleared considerably. Later took a severe cold and is now coughing more and losing weight and lung signs are more active.

CASE 16.—Mrs. N., 38 years old, married.

Clinical Diagnosis.—Pulmonary tuberculosis of left base. Bacilli in sputum. Between July 24, 1905, and May 25, 1906, gave thirty-three injections. Patient gained seven pounds in weight and lung signs improved. Have not examined her of late.

CASE 17.—Mrs. P., 33 years old, married, housewife.

Clinical Diagnosis.—Pulmonary tuberculosis of both apices. Bacilli in sputum. From March, 1905, to April, 1906, gave twenty-five injections. Patient never did well and lung signs never improved.

CASE 18.—Mrs. —, 38 years old, married, clerk.

Clinical Diagnosis.—Pulmonary tuberculosis and tuberculosis of lymph glands of neck. Tubercular peritonitis. Tubercular pleuritis of left pleura. Abdomen opened and drained by Dr. Benjamin in March, 1906, since which time patient has received forty injections of tuberculin. Has gained twenty pounds in weight. Peritoneum and pleura are free of signs of the disease. Lymph glands of neck are much smaller. Patient is in excellent condition.

Of the eighteen cases here reported three are dead, five are losing ground, three are in a stationary stage, two are improving, while in the remaining five the disease is apparently arrested. From so limited a number of cases studied over so short a time it would not seem wise to attempt to draw conclusions. The impressions we have received are these:

1st. Advanced stages of tuberculosis should not be given tuberculin. It adds fuel to the

fire and they go rapidly down hill.

2d. Some middle stage cases, especially if they are at a standstill, will do well under the tuberculin; will gain rapidly in strength and weight and the lung signs will clear up.

3d. If a middle-stage case does not show improvement after eight or ten injections the chances are against success by prolonged use of the tuberculin.

4th. The only way to determine which cases will and which will not improve by the use of tuberculin is to try each individual case.

5th. Judging from animal experimentation the incipient cases ought to do best under the tuberculin treatment, and this in the main is true; however, some incipient cases in our experience have not improved by its use.

6th. We have observed no bad results from the use of tuberculin except in advanced stages.

7th. We have observed no immunizing effect. Some of our cases while under treatment have developed new foci of infection in the pleuræ, the peritoneum, the larynx and elsewhere.

8th. Given in the early and middle stages of the disease by one who understands its use and action and combined with the open air treatment it is the best agent at present at our command for the treatment of this disease.

INFLAMMATION OF THE CIRCUMFLEX NERVE

Chas. F. Disen, of Minneapolis, Minn., shows that neuritis of the circumflex nerve is rather frequent after fracture or dislocation of the shoulder. The nerve, on account of its anatomical situation, is easily injured. The symptoms are overshadowed by those of the shoulder injury. They begin with a gnawing pain and weakness of the muscles, followed by abdominal sensations. Exquisite tenderness is felt over the deltoid and teres minor muscles. Any case of suddenly appearing and persistent pain preceded by a history of exposure, overwork or injury should be suspected of being a beginning neuritis. Cerebral paralysis may be excluded by reaction of degeneration which is present in neuritis and absent in cerebral lesions. Treatment is rest in a comfortable position with soothing applications of an oily nature. Effleurage is very useful, while severer forms of massage are injurious. In the third week mild descending galvanic currents are useful. When voluntary motion begins to return passive motions should be added.—Medical Record.

PHYSIOLOGIC CHEMISTRY AND DIETETICS

CONDUCTED BY

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THE CALCIUM SALTS

Since the initial work of Howell and Loeb upon the action of sodium, potassium, magnesium, and calcium salts in cell-metabolism, some careful differentiation of the influence of these metabolites has been made, with a consequent revision of physiologic conclusions. The later, unlike the earlier, studies have not been confined to heart-tissue. Interesting results, indeed, have followed these wider and more discriminative experiments, and with particular reference to the part which calcium plays in the operation of the nerve-muscle machine.

Howell regarded calcium as a stimulator, while Loeb classed its ions, with those of magnesium, as inhibitors of muscular rhythms. Stanley Benedict presents an adjustment of the difference of view in the observation that the calcium ions, in excess, increase muscular tonus, or resistance; while, upon their diminution within the cell, irritability, or the power of response to stimulation, although not necessarily the response itself, is increased. In a word, contractility is neither favored nor disfavored, saving through the associated function of irritability.

Martin, again, considers the role of calcium to be that of a promoter of oxidation, and thinks, with Langendorff, that the oxidative products thus formed within the cells serve as its intrinsic stimuli.

Perhaps the most striking contribution to the study of the subject is that of Meltzer and Auer, who have clearly established a distinction between the salts of calcium and magnesium in their relation to nerve and muscle,—and not a distinction, merely, but a definite antagonism. They corroborate Loeb's view that magnesium is a true inhibitor and an anesthetic agent. It serves as a diminisher of irritability. But, on the other hand, they find, with Overton, that calcium is a neutralizer of the effects of magnesium. It enhances irritability and strikingly recovers the organism from the paralysis, even to the point of respiratory prejudice, which magnesium has induced.

This work of Meltzer and Auer suggests, again, that calcium influences, not the contractility of muscle, but the irritability of nerve and

muscle alike. It is probably not a true antagonist, therefore, of potassium salts, which apparently are depressors of contractile power.

The earlier physiologic view that the salts are regulators of metabolism is reilluminated by the facts of electrolytic association and dissociation. A nicely adjusted ionic tide determines the intrinsic metabolism of the colloids of the cell, and, in its ebb and flow, the sodium salts, exercising their influence upon the cell membrane and varying osmotic pressure, serve as the agents of adjustment.

BEARD.

THE PEDIATRIC SECTION OF THE A. M. A. AND CREAM FEEDINGS

At the recent session of the American Medical Association, lively interest was shown, on the morning devoted to the discussion of infant-feeding, in the pediatric section.

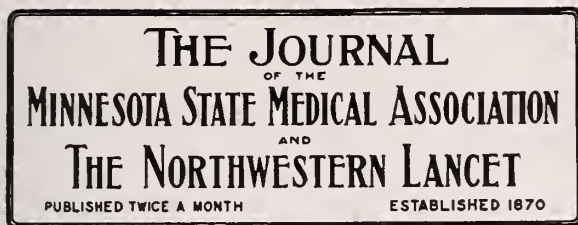
The condemnation of top milk and high-fat feeding by Jacobi was energetic. His cases showing the results of excessive fat were typical and instructive. As he said in his preface, many of the ideas presented were not new; in fact, he has insisted on this view for years in writing and teaching.

Southworth, the newly elected chairman of the pediatric section, read a paper entitled "High-Fat Percentage in Infant-Feeding." He considers the digestion of fat "the question of the hour." He discussed the delay of progress in infant-feeding caused by the misinterpretation of the schools and the misuse of the term "curds." Southworth attributed the chief errors to miscalculations, centrifugal creams, misuse of "top milks," and rich milk.

Credit must be given to Jacobi for having recognized early, and constantly opposed for years, the grave errors in the method of "percentage modification" of milk. The controversy has, however, gained new impetus from the similar one abroad, based upon the clinical and laboratory findings of the Berlin and Breslau schools, which has resulted in the discrediting of the Biedert cream feedings.

At this time a word of caution is in place, as it is not the rational feeding of fat that is criticised, but the over-feeding and misinterpretation of the results.

SEDGWICK.



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NATIONAL HEALTH LAWS

The following editorial from The Minneapolis Journal of Sunday, July 19th, is exceedingly interesting, as it contains the opinion of John P. Norton, of Yale University.

The necessity for a national board of health is very evident from the interest which has been aroused by the medical and lay press during the past few months. In connection with this editorial, it is also interesting to note that the Minnesota Live Stock Sanitary Board expects to expend one million dollars, or at least to ask for that amount as an appropriation from the legislature, to carry on their work among animals. If this be true, why should the legislators object to a similar fund appropriated for the benefit of the public health of man, or, at least, for the prevention of disease?

Those who are familiar with the work of the Minnesota State Board of Health, and particularly with the appropriation which they squeeze out of the legislature year after year, will note the very great difference between the sums asked for and the amounts realized. Twenty-five thousand dollars a year for the State Board of Health, in all its departments, is considered a very large sum to carry on the work. The department of vital statistics alone means an expenditure of at

least \$1,500, and even then the work is not thoroughly done.

The following is the quotation referred to:

NATIONAL HEALTH LAWS

Both parties having agreed upon the establishment of a national board of health it becomes proper to inquire what is the need of such a board and what could it do?

The need of measures to conserve the national health is vigorously set forth by John Pease Norton, of Yale university. Professor Norton says:

"There are four great wastes to-day, the more lamentable because they are unnecessary. They are preventable death, preventable sickness, preventable conditions of low physical and mental efficiency and preventable ignorance. The facts are that these four wastes are a drain upon the national resources which make the waste of coal or wood or iron pale into insignificance. At least 1,500,000 persons must die in the United States during the next twelve months; 4,200,000 will be constantly sick; 5,000,000 homes will be rendered more or less wretched by mortality and morbid conditions. Of the people living to-day over 8,000,000 will die of tuberculosis."

Professor Norton shows that while the government does everything for the care of animals it does nothing for the care of man. It expended last year on plant and animal health \$7,000,000, but nothing on the health of the supreme animal. It stamped out cholera among swine, but never attacked pneumonia among men and women. It ostracized bugs from the plants, beetles from elm trees, blights from potatoes, but took no action against measles, pneumonia and scarlet fever. The government has spent for the development of agriculture \$46,000,000 in the past ten years, but never a cent for the eradication of tuberculosis.

The only thing the federal government has ever done directly for public health is to enact a pure food law, which is not a small item of advance legislation, and to provide for the exclusion of diseased and afflicted immigrants.

These acts should now be supplemented, it is believed, by a comprehensive act creating a department of public health, whose head shall be a member of the cabinet. It should be labeled a department to decrease deaths and sickness. Its work would be affirmative, as is that of the department of agriculture. As the latter department every year tends to make the crops better and more diversified, so the department of health would tend every year to increase the average longevity of the human factors of national strength, besides making those factors more efficient by decreasing sickness.

INCREASED ACTIVITY AGAINST TUBERCULOSIS

During the past few months the Minnesota State Association for the Prevention and Relief of Tuberculosis has, under the supervision of Christopher Easton, its secretary, who is also the representative of the Minnesota State Board of Health, visited various cities in the State of Minnesota with the tuberculosis exhibit. The number of people who visited the exhibit in a few of the larger towns, like Winona, Rochester, Mankato, and Red Wing, was about 23,000.

During the exhibit a large amount of printed material was distributed, in which various simple explanations and warnings against tuberculosis were given, and simple means for prevention, which evidently aroused a good deal of enthusiasm, not only in this city but elsewhere.

This year evidently is to be the banner year in the fight against tuberculosis.

The International Congress on Tuberculosis, which meets in Washington, D. C., next month, will be a further stimulus to other states and unions. It is very necessary, however, that this Congress be increased in its membership, and physicians throughout the state are urged to send in their names with \$5 to show their interest and willingness to co-operate with the Congress. Unless this is done it will be necessary for the government, or some other source, to provide funds for the actual necessary expenses of the Congress. It will cost about \$7,000 alone for the printing of its voluminous reports, and each subscriber who sends in a remittance is entitled to a copy of the work.

The death-rate in Minnesota is not very different from what it is in other states. About 10 in 1,000 is an average death-rate, and one of each of these ten dies of tuberculosis.

The State Hospital at Walker is now filled with sixty patients. Thirty-two are waiting in a shack until their buildings are completed, and when we remember that only early cases of the disease are received there, this does not mean very much in the way of prevention, except that it teaches the few who are privileged the ways and means of prevention and cure.

A further report of the recent meeting held at Walker is presented on another page of this issue. Those who were in attendance say that the interest was greater than at any previous meeting of any committee on the suppression of tuberculosis.

SANITATION IN OHIO

At the annual meeting of the Anglaize Medical Society, on March 26, 1908, Dr. C. O. Probst, the Executive Secretary of the Ohio State Board of Health, read a very instructive and interesting paper relative to the work of his State Board. He showed in the beginning how the Board was organized, and with what difficulties they finally succeeded in developing into a permanent and greater organization. The popularizing of the Board was evidently a very slow process, but it has done a tremendous amount of good and has finally educated people and the legislature

so that they give encouragingly of the state money for the use of the State Board.

His paper is divided into four headings: "Organization," "Education," "Legislation," and "Investigation."

The education of the people is the aim of every State Board of Health, not only through its printed matter, but through its local health boards in the various cities, towns, and villages. Gradually the people are beginning to appreciate the necessity of preventing disease, and they understand now, and are willing to receive instruction, as to what methods are best to prevent the spread of the most commonly known diseases.

In the same way, the investigation of disease is carried on, usually by appeals through educational methods or by forced methods in which the state laws provide for the suppression of epidemics and the prevention of communicable diseases.

Two years ago the legislature of Ohio gave the Board \$15,000 for the investigation of all the water- and sewage-purification plants in Ohio. The legislature of Ohio must have been pretty well educated to give this sum of money, and in addition they appropriated the sum of \$350,000 to complete a state sanitarium. They also provided \$1,000 for the preparation of an exhibit, showing what Ohio has done in the prevention of tuberculosis. This exhibit is to be given in connection with a meeting of the International Congress on Tuberculosis in Washington.

The Minnesota State Board of Health is not behind in its efforts to educate the people, but it has not yet succeeded in educating the legislators. This can be done only by persistent work on the part of our medical men. Our State representatives must be shown the necessity of the expenditure of money to investigate and prevent communicable diseases. If the medical profession would take a sufficient interest in legislative matters, there would be no question but that a proper sum could be obtained. But there is no reason why Minnesota should not be in the foreground and should set an example to many other states which need encouragement. For instance, New York State has just passed a law declaring tuberculosis to be an infectious and communicable disease, and providing for the reporting of all cases to the local health authorities.

This law has been on the books of the Minnesota State Board of Health for some time, and the local boards of health throughout the state have been encouraged to follow it up, but there

seems to be a good deal of sentiment among the people, fearing that in reporting cases of tuberculosis the names of the sufferers will become public property notwithstanding they have been assured time and again that no publicity will be given to any reports which come to the local or State Boards of Health. Physicians evade the law and avoid responsibility. If every medical man would do a little missionary work among his friends, and particularly among representatives of his district, it would be possible to get a sufficient sum to maintain the Board and to provide for all these contingencies which must be met from time to time.

CORRESPONDENCE

ESSENTIALS FOR STUDY ABROAD

Minneapolis, July 20, 1908.

TO THE EDITOR:

At this season readers of THE JOURNAL-LANCET contemplating a visit to the medical clinics of Germany and Austria will probably be interested in some observations made during my sojourn there and may be saved much disappointment.

There are medical men who visit Europe for pleasure, and they drop into the different clinics to see what is going on. They do not expect to add much to their knowledge and are therefore not disappointed. Surgeons in witnessing operations, and lucky enough to be next to the operator, may pick up useful knacks here and there.

Another class of physicians go to Germany with the expectation of taking up a specialty, to return as full-fledged specialists after three or four months. Many of these go to Europe without any knowledge of another language than their own. They find no instruction in their special line given in English. They cannot understand why these German instructors and professors do not learn enough English to teach those who cannot understand German. They forget that, besides English, the German professor would have to speak French, Russian, Scandinavian, Japanese, Portuguese, and a few other languages, to do justice to all who are willing to take courses. Men who go with such expectations are bound to be disappointed. They soon become dissatisfied and disinterested. They move on from Berlin to Vienna and find the same conditions. On they go to Paris, and unless the language in which instruction is given in the French capital has undergone a complete

revolution since my last visit, they find less encouragement than in Germany and Austria where at least some courses are given in English. They return to the United States either "knocking" the Continental clinics or joining in their praises with others who have derived great benefit, much as one who has no knowledge of music does not dare to tell that he went asleep during the rendering of "The Dream of Gerontius." These men should stay at home, get a phonograph or teacher, and study the language of the country which they expect to visit. They are a bore to the instructor, who usually understands English but cannot speak it fluently enough to carry on a conversation. They should go to England.

But there is, happily, another class of men. They have been internes in hospitals and wish to round out their medical education by experience abroad. They have been in general practice in the country for years and now wish to prepare themselves, after post-graduate courses in New York, Baltimore, or Chicago, for a specialty by a thorough study. They go to stay and to learn. They learn language and medicine. It is this class of men who, by their earnestness, eagerness to learn, and untiring application, impress the slower, easy-going German with the progressive "I will" spirit of the West. Of course, the man who has the advantage of knowing German and knows it thoroughly has free access to all fields of information.

In conclusion, let me again insist upon the necessity of knowing the language of the country one intends to visit, if he wishes to benefit by the teaching; otherwise his time in the clinics is wasted and he may more agreeably spend it in the museums, the picture-galleries, among the ancient streets, churches, and castles, or in the woods and mountains where one can see and enjoy without knowing the language of the population.

L. A. NIPPERT, M. D.

In cases of suspected fracture of the skull, percussion-auscultation will be found a valuable procedure where all the other signs and symptoms have been negative. The procedure is the following: The forehead is repeatedly tapped sharply in the median line with the middle finger, the stethoscope being moved from one point to another from before backward. If a fracture be present, a cracked-pot sound is elicited just beyond it. The corresponding part of the head on the other side should be auscultated to eliminate possible error.—American Journal of Surgery.

REPORTS OF SOCIETIES

CHISAGO-PINE COUNTY SOCIETY

The Society met at Pine City on July 14th, with ten members present. Papers were read as follows: "Enlargement of the Prostate," by Dr. J. W. Little, Minneapolis; and "Pleuritic Effusion," by Dr. L. A. Nippert, Minneapolis.

The members were taken to Lake Pokogama on launch, where luncheon was served and the program given. They also visited the Taylor Sanatorium.

C. A. ANDERSON, M. D., Secretary.

LYON-LINCOLN COUNTY SOCIETY

The Society met at Tyler, July 14th, with ten members present. Papers were read as follows: "Anthrax, With Report of Case, and Recovery," by Dr. B. C. Knudson, Tyler; "Exudative Pleurisy," by Dr. P. J. Weyerhauser, Ivanhoe; "Empyema," by Dr. A. J. Cox, Tyler; "Report of a Case," by Dr. Chas. Germo, Balaton; "State Sanitary Conference and International Tubercular Congress," by Dr. H. M. Workman, Tracy.

H. M. WORKMAN, M. D., Secretary.

THE ST. LOUIS COUNTY SOCIETY

The Society went to Coleraine for a meeting and an outing on July 9th, 35 members being present.

Dr. Felch of Ishpeming, Mich., read a paper on "Appendicitis Symptoms and Diagnosis." His paper was excellent and was greatly appreciated.

Dr. Kean of Coleraine and Mr. John C. Greenway certainly did everything they could to make the trip a pleasant one. The Duluth members left on a special train at 7:00 a. m. reaching Coleraine at 10:00 a. m. We spent all the forenoon at the mines, and after lunch held the meeting and voted in seven new members. The afternoon was spent on the beautiful lake, with banquet at 2:00 p. m.

H. F. MCGAUGHEY, M. D., Secretary.

THE UPPER MISSISSIPPI SOCIETY

The July meeting of the Society was held at the State Sanatorium at Walker on July 21st. The entire program, which has already been printed in these columns, was carried out.

Nearly one hundred of our leading physicians and some from Iowa were present. The discussion on the papers was full and spirited, and many points of interest were brought out.

Dr. Marclay's hospitality was highly appreciated by the visitors, as was that of the citizens of

Walker. A delightful lake ride, an Indian war dance, a dog feast (for the Indians), etc., were the side attractions.

The meeting was profitable to all the doctors present, and the ultimate good of the knowledge of the new sanatorium gained by the visitors will be inestimable.

G. W. LOTHIAN, M. D., Secretary.

EDITORIAL NOTE.—The Twin City men who went to Walker are enthusiastic in their praise of this meeting, both for its scientific value and for the delightful time given them. They say no man could have prepared and conducted a meeting with more efficiency than shown by President Roberts and Secretary Lowthian, of the Upper Mississippi Society, and Dr. Marclay, of the Sanatorium. All say such meetings are worth while.

SOUTHERN MINNESOTA ASSOCIATION

The seventeenth annual meeting of the Southern Minnesota Medical Association will be held at Owatonna, August 6th, 1908. A program of unusual interest is to be presented, and dinner will be served at the leading hotel, by the courtesy of the Steele County Medical Society. A cordial invitation is extended to the profession of the state, to be present. This Association has never had a poor meeting, and this one will be among its best.

W. T. ADAMS, M. D., Secretary.

BLUE EARTH VALLEY SOCIETY

The Society held its midsummer meeting at Fairmont on July 16th, with nine members present. The following papers were read: "Injuries to the Knee-Joint," by Dr. H. P. Johnson, Fairmont; "Operations During Pregnancy," by Dr. C. J. Holman, Mankato; and "Hemophilia, With Report of a Case," by Dr. W. J. Richardson, Fairmont.

The Society adopted the following resolutions on the death of Dr. J. P. Humes:

WHEREAS, Dr. J. P. Humes, of Winnebago, Minn., a charter member and the first president of this Society, has been called to the great beyond after many years of faithful service, not only in medicine, but in the cause of humanity at large.

Therefore, be it resolved, That we commend his untiring faithfulness, his sympathetic tenderness, and his skill as an example to us all.

That in his death we recognize a distinct loss and that we hereby wish to extend to his family our heartfelt sympathy.

Resolved, further, that the Secretary be instructed to spread these resolutions upon the records of the Society and that a copy be sent to the bereaved family.

G. H. LUEDTKE, F. L. DURGIN, H. J. FORBES,
Committee.

J. A. BROBERG, M. D., Secretary.

NEWS ITEMS

Dr. L. L. Mayland has moved from Bagley to Ryder, N. D.

Dr. A. H. Joistad, of St. Paul, has located at Maddock, N. D.

Dr. A. H. Ludeman, of Minneapolis, has moved to Buffalo.

Dr. F. A. Brink has moved from Pierre, S. D., to Academy, S. D.

Dr. A. J. Walker, a Chicago graduate, has located at Douglas, N. D.

Dr. Syver Vinje, of Henning, is doing post-graduate work in Chicago.

The corner-stone of the new \$40,000 hospital at Rugby, N. D., was laid last month.

Dr. Frank D. Gray, of Vesta, was married last month to Miss Nettie Urbach, of the same place.

Dr. J. C. Kettner, of Aberdeen, S. D., has decided to return to Hosmer, S. D., where he formerly practiced.

Dr. F. U. Davis, of Faribault, has been appointed physician to the State School for the Blind at Faribault.

Dr. Arthur Stahl, of Chicago, has located in Brookings, S. D., and become associated with Dr. F. E. Boyden.

Dr. Leslie G. Hill, of Watertown, S. D., has returned from the East, where he has been doing post-graduate work.

Dr. J. M. Riggs, of the Lenont Hospital staff, Virginia, has been appointed superintendent of a hospital in Anaconda, Mont.

The contracts for the building for the Deaconess Hospital at Faribault was let last month. The cost will be nearly \$50,000.

Dr. M. J. Kern, of St. Cloud, who has been doing post-graduate work in Europe, will soon be home, as he sails in a day or two.

In the suit against the Heidelberg Institute, referred to in an editorial in our last issue, the jury gave a verdict for \$3,500 against the institution.

Dr. Frank G. Bissell, of Maple Lake, who has been spending some months in Europe, has located in Minneapolis, with offices in Masonic Temple.

Dr. Thomas F. McKey, of Albert Lea, has moved to Faribault and will occupy the offices so long occupied by Dr. F. M. Rose, who will give up general practice.

Dr. Edward L. Fortier, a recent graduate of the State University, will locate in Lidgerwood, N. D., becoming associated with Dr. N. J. Shields, of that place.

Dr. Lawrence Brown, of the Lake Saranac (N. Y.) Sanatorium, is assisting the Manitoba commission in the selection of a site for a sanatorium. Dr. Brown delivered a number of public lectures in Winnipeg on tuberculosis.

The Black Hills (S. D.) Medical Association met at Ft. Meade in July, and were entertained by Major Klup. Cases were presented and papers read by Drs. J. W. Freeman, W. G. Smith, F. E. Walker, and Dr. Miller, of the U. S. army. Major Kulp also spoke of medical conditions in the army.

The Grand Forks (N. D.) Medical Society held its annual meeting last month, and elected the following officers for the current year: President, Dr. Henry O'Keefe, Grand Forks; vice-president, Dr. E. J. Countryman, Grafton; secretary, Dr. A. L. McDonald, Grand Forks; delegates, Dr. W. H. Witherstine and Dr. Zella Stewart, Grand Forks. Dr. H. H. Healy retired from the secretaryship after five years of continuous service.

Gov. Crawford has appointed as South Dakota delegates to the International Tuberculosis Congress, which meets at Washington September 2 to October 12, Drs. W. H. Lane, Miller; F. M. Crain, Redfield; W. M. Edgerton, Faulkton; William Edwards, Bowdle; E. C. Miller, Brookings; F. W. Fryberg, Mitchell; F. A. Spatford, Flandreau; W. E. Moore, Tyndall; F. N. Schoonmaker, Arlington; F. L. Class, Huron; Frank S. Howe, Deadwood; George Edwards, De Smet; A. H. Tufts, Sioux Falls; D. W. Rodgers, Yankton; R. F. Campbell, Watertown; George Countryman, Aberdeen.

PHYSICIANS LICENSED AT THE JULY EXAMINATIONS TO PRACTICE IN NORTH DAKOTA

J. A. Burket, Driscoll; R. N. Davis, Hague; C. A. Durkee, Fairmount; W. B. Forbes, Bismarck; F. P. Ford, McHenry; E. M. Freese, Jamestown; J. L. Hammond, Coteau; E. H. Holt, Bismarck; H. B. Huntley, Gackle; M. R. Irby, Cando; C. J. King, McHenry; F. V. Ly-

man, McLean; F. McManus, Buford; A. B. McNab, Beach; W. H. Moore, Sykeston; G. Mikelson, Ryder; O. A. Olson, Sheyenne; M. S. Savre, Grand Forks; T. J. Strong, Enderlin; J. H. Trimbo, Drake; J. P. Weyrens, Dickinson; D. O. Wheelock, Eckman; P. S. Will, Williston; R. P. Williams, Gwinner; M. R. Williams, Devils Lake.

PHYSICIANS LICENSED AT THE JUNE,
1908, EXAMINATION TO PRACTICE
IN MINNESOTA

UPON EXAMINATION

Abbott, J. S., U. of Penn., 1908.
Alexander, I. M., U. of Minn., 1908.
Andrews, R. N., U. of Minn., 1908.
Bloom, C. J., U. of Minn., 1908.
Bock, R. A., U. of Minn., 1908.
Bostrom, A. E., U. of Minn., 1908.
Boyd, L. M., U. of Minn., 1908.
Brown, J. C., U. of Minn., 1908.
Burns, H. A., U. of Minn., 1908.
Clay, A. J., Hamline, 1908.
Dohm, A. J., Hamline, 1906.
Eichler, W. C., Hamline, 1908.
Engstrom, F. A., U. of Minn., 1908.
Eusterman, George, U. of Minn., 1908.
Fortier, E. L., U. of Minn., 1908.
Franchina, Francesco, U. of Catania, Italy, 1904.
Gibbs, W. H. G., Hamline, 1908.
Girvin, R. B., Hamline, 1908.
Goltz, E. V., Northwestern, 1908.
Grangaard, H. O., U. of Minn., 1908.
Hemingway, E. E., U. of Minn., 1908.
Hensel, C. N., U. of Minn., 1908.
Heron, R. C., Hamline, 1908.
Hitchings, W. S., U. of Minn., 1908.
Hursh, M. M., Hamline, 1908.
Jacquot, G. L., Hamline, 1908.
Johnson, E. W., Hamline, 1908.
Kennedy, D. F., Hamline, 1908.
Kerrick, S. E., Hamline, 1908.
Lindberg, A. C., U. of Minn., 1908.
Manley, J. R., U. of Minn., 1908.
Magnusson, G. A., U. of Minn., 1908.
Nelson, M. S., U. of Minn., 1908.
Olson, R. G., Hamline, 1908.
Ostrander, A. J., Hamline, 1908.
Patterson, C. H., Hamline, 1908.
Paulson, T. S., Hamline, 1908.
Quist, H. W., U. of Minn., 1907.
Roan, Carl M., U. of Minn., 1908.
Schmidt, G. F., Hamline, 1908.

Schoch, R. B. J., Northwestern, 1908.
Smallwood, J. T., U. of Minn., 1908.
Smith, C. E., Jr., U. of Penn., 1908.
Smith, C. S., U. of Minn., 1908.
Stebbins, E. B., U. of Minn., 1908.
Walker, G. H., U. of Minn., 1908.
Watson, Tolbert, U. of Minn., 1908.
Wilder, K. W., U. of Minn., 1908.
Wright, S. G., Hamline, 1908.

BY RECIPROCITY

Aldrich, L. I., U. of Iowa, 1888.
Aplin, F. W., Northwestern, 1904.
Burns, R. L., Rush, 1906.
Corrigan, J. E., U. City of New York, 1892.
Dorset, B. C., U. of Penn., 1904.
Dryden, F. M., Hahnemann, Chicago, 1907.
Elstein, Leo Fink, P. & S., Baltimore, 1885.
Francis, H. M., Rush, 1906.
Holliday, E. R., P. & S., Chicago, 1893.
Holmberg, L. J., P. & S., Chicago, 1904.
Jager, Thor Jager, Northwestern, 1907.
Lampson, H. G., U. of Mich., 1895.
Lemke, Geo. Fred, P. & S., Baltimore, 1906.
Moench, Louis L., Ecl. Med. Inst., 1903.
Scarborough, W. E., Barnes, 1904.
Whipple, L. A., Am. Col. of Med. & Surg., 1905.
Willard, H. G., Rush, 1904.

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ROSTER OF THE SOUTH DAKOTA STATE MEDICAL ASSOCIATION

JULY, 1908

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Gilfillan, J. C., Aberdeen.
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Harris, J. L., Webster.
Herman, H. J., Webster.
Herman, J. D., Conde.
Hill, Robt., Ipswich.
Holmes, A. E., Verdon.
Holmes, C. F., Hecla.
Hoagland, C. F., Veblen.
Hurley, S., Gettysburg.
Johnston, M. C., Aberdeen.

Jones, J. D., Groton.
Kerns, G. G., Roscoe.
Kettner, J. C., Hosmer.
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Kriesel, W. A., Milbank.
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Mallery, C. B., Aberdeen.
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Mertens, J. J., Lebanon.
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Miller, H. H., Britton.
Miller, V. M., Mellette.
Miller, M., Mellette.
Murdy, R. L., Aberdeen.
Olson, C. O., Groton.
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Pickering, L., Stratford.
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Rock, H. J., Aberdeen.
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Shocky, L. C., Pollock.
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McWhorter, Port, Miller.
Milburn, J. A., Wessington.
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Jenkinson, H. E., Wessington Springs.
Jones, E. W., Mt. Vernon.
Kammerling, F. S., Spencer.
Kidd, F. S., Woonsocket.
LaShier, B. W., Armour.
Laughead, J. S., Letcher.
Launspach, G. W., Lake Andes.
Lawver, J. C., Spencer.
Leichty, E. J., Corsica.
Maytum, W. J., Alexandria.
Menser, Bert, Bridgewater.
Miller, J. L., Kennebec.
Newman, F. M., Presho.
Pherrin, O. D., Stickney.
Reamer, E. F., Mitchell.
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Schofield, H. B., Parkston.
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Smiley, T. B., Mt. Vernon.
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Strang, C. B., Armour.
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Dickinson, S. B., Watertown.
Eddy, J. S., Henry.
Finnerud, H. M., Watertown.
Freeburg, H. M., Watertown.
Frink, O. G., South Shore.
Hess, F. W., Estelline.
Hill, L. G., Watertown.
O'Bryan, H. J., Watertown.
O'Toole, C. S., Vienna.
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Sherwood, H. W., Doland.
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Bowers, C. F., Sioux Falls.
Brown, S. A., Sioux Falls.
Butler, C. F., Dell Rapids.
Corrigan, J. E., Canton.
Craig, W. D., Sioux Falls.
Culver, C. F., Sioux Falls.
Parsons, W. A., Guadalajara, Mex.
Parsons, J. G., Sioux Falls.
Perkins, E. L., Sioux Falls.
Putnam, E. D., Sioux Falls.
Rider, A. S., Flandreau.
Roberts, T. S., Sioux Falls.
Roberts, W. P., Sioux Falls.

Adams, G. S., Yankton.	Keller, S. A., Herrick.
Anderson, E. T., Platte.	Kenaston, H. R., Bonesteel.
Beall, L. F., Irene.	Koobs, H. J. G., Scotland.
Berry, S. G., Tyndall.	Livingston, H. F., Yankton.
Blezek, T. M., Tabor.	Malay, R. P., Yankton.
Burkland, P. R., Vermillion.	Mead, L. C., Yankton.
Caldbeck, S. L., Volin.	Moore, D. V., Yankton.
Clagett, M. H., Yankton.	Moore, F. A., Lesterville.
Collisi, N., Vermillion.	Moore, W. E., Tyndall.
Cruikshank, Th., Vermillion.	Morehouse, E. M., Yankton.
Doyle, E. M., Yankton.	Murphy, Jennie C., Yankton.
Duguid, J. O., Springfield.	Peterman, A. L., Parker.
French, H. E., Vermillion.	Phillips, C. A., Elk Point.
Frink, R. P., Wagner.	Pinnard, P. H. A., Jefferson.
Gross, C. C., Yankton.	Roane, James, Yankton.

[illegible]

REPORTED FROM 72 CITIES HAVING A POPULATION OF 1,000 OR UPWARDS
FOR THE MONTH OF APRIL, 1908

CITIES	Population of U. S. Census of 1900	Population of State Census of 1905	Total Deaths	Tuberculosis of Lungs	Other Forms of Tuberculosis	Pneumonia	Bronchitis	Diphtheria	Scarlet Fever	Measles	Smallpox	Whooping Cough	Cerebrospinal Meningitis	Typhoid Fever	Diarrheal Dis- eases of Children	Puerperal Septicemia	Cancer
Albert Lea.....	4,500	5,657	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Anoka.....	3,769	4,053	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Austin.....	5,474	6,489	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Barnesville.....	1,326	1,566	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Bemidji.....	2,183	3,800	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Blue Earth.....	2,900	2,364	13	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Brainerd.....	7,524	8,111	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Chaska.....	2,165	2,085	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Chatfield.....	1,426	1,300	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Cloquet.....	3,074	6,117	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Crook ton.....	5,359	6,794	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Detroit.....	2,060	2,149	68	8	4	3	1	1	1	1	1	1	1	1	1	1	1
Duluth.....	52,968	64,942	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
E. Grand Forks.....	2,077	2,481	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Ely.....	3,712	4,045	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Eveleth.....	2,752	5,332	9	2	1	1	1	1	1	1	1	1	1	1	1	1	1
Faribault.....	7,868	8,279	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Fairmont.....	3,440	2,955	8	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Fergus Falls.....	6,072	6,692	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Granite Falls.....	1,214	1,340	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Hastings.....	3,811	3,810	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Hutchinson.....	2,495	2,489	6	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Jordan.....	1,270	1,311	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Lake City.....	2,744	2,877	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Litchfield.....	2,280	2,415	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Little Falls.....	5,774	5,856	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Luverne.....	2,223	2,272	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Le Sueur.....	1,937	1,842	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Madison.....	1,336	1,604	16	2	1	1	1	1	1	1	1	1	1	1	1	1	1
Mankato.....	10,559	10,996	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Marshall.....	2,088	2,243	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Melrose.....	1,768	2,151	270	21	2	53	4	6	2	3	1	11	4	6	13	13	13
Minneapolis.....	202,718	261,974	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Montgomery.....	979	1,281	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Montevideo.....	2,146	2,595	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Moorhead.....	3,730	4,794	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Morris.....	1,934	2,003	9	1	1	1	1	1	1	1	1	1	1	1	1	1	1
New Prague.....	1,228	1,419	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1
New Ulm.....	5,403	5,720	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Northfield.....	3,210	3,438	7	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Ortonville.....	1,247	1,612	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Owatonna.....	5,561	5,651	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Pipestone.....	2,536	2,885	12	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Red Lake Falls.....	1,885	1,797	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Red Wing.....	7,525	8,149	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Redwood Falls.....	1,661	1,806	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Renville.....	1,075	1,229	30	1	1	2	1	1	1	1	1	1	1	1	1	1	1
Rochester.....	6,843	7,233	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Rushford.....	1,100	1,133	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1
St. Charles.....	1,304	1,238	9	1	1	1	1	1	1	1	1	1	1	1	1	1	1
St. Cloud.....	8,663	9,422	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
St. James.....	2,607	2,320	231	23	4	28	3	1	3	1	1	3	1	10	1	13	13
St. Paul.....	163,632	197,323	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
St. Peter.....	4,302	4,514	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Sauk Centre.....	2,220	2,463	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Shakopee.....	2,046	2,069	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Sleepy Eye.....	2,046	2,312	6	1	1	1	1	1	1	1	1	1	1	1	1	1	1
So. St. Paul.....	2,322	3,458	8	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Stillwater.....	12,318	12,435	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Thief River Falls.....	1,819	3,502	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Tower.....	1,366	1,340	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Tracy.....	1,911	2,015	8	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Virginia.....	2,962	6,056	7	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Wabasha.....	2,528	2,619	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Warren.....	1,276	1,640	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Waseca.....	3,103	2,838	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Waterville.....	1,260	1,383	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1
West St. Paul.....	1,830	2,100	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Willmar.....	3,409	4,040	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Windom.....	1,944	1,884	12	2	1	1	1	1	1	1	1	1	1	1	1	1	1
Winona.....	19,714	20,334	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Worthington.....	2,386	2,276	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

REPORTED FROM 65 VILLAGES HAVING A POPULATION OF 1,000 OR UPWARDS

FOR THE MONTH OF APRIL, 1908

VILLAGES	Population of U. S. Census of 1900	Population of State Census of 1905	Total Deaths	Tuberculosis of Lungs	Other Forms of Tuberculosis	Pneumonia	Bronchitis	Diphtheria	Scarlet Fever	Measles	Smallpox	Whooping Cough	Cerebrospinal Meningitis	Typhoid Fever	Diarrheal Dis- eases of Children	Puerperal Septicemia	Cancer
Ada.....	1,253	1,515	2	2													
Adrian.....	1,253	1,184	0														
Aitkin.....	1,719	1,896	0														
Akeley.....		1,636	1														
Alexandria.....	2,681	3,051	5	1		1										1	1
Appleton.....	1,184	1,321	1														
Belle Plaine.....	1,121	1,301	1														
Benson.....	1,525	1,766	2														
Breckenridge.....	1,282	1,850	2														
Buffalo.....	1,040	1,124	2					1									
Caledonia.....	1,175	1,405	2														
Canby.....	1,100	1,505	2														1
Cannon Falls.....	1,239	1,460	3	1													
Cass Lake.....	546	1,062	1														
Chisholm.....		4,231	9	2												1	1
Crowson.....	962	1,056	2														1
Delano.....	967	1,023	0														
Fosston.....	864	1,000	3	1													
Frazee.....	1,000	1,146	2														
Glencoe.....	1,780	1,805	3														1
Glenwood.....	1,116	1,718	0														
Graceville.....	856	1,032	0														
Grand Rapids.....	1,428	2,055	3				1										
Hallock.....	805	1,014	1														
Hibbing.....	2,481	6,566	12	1	1	4											
Jackson.....	1,756	1,776	0														
Janesville.....	1,254	1,205	3														1
Kasson.....	1,112	1,049	0														
Kenyon.....	1,202	1,252	1														1
Lake Crystal.....	1,215	1,231	0														
Lanesboro.....	1,102	1,041	0														
Long Prairie.....	1,385	1,256	1														
Madelia.....	1,272	1,290	0														
Milaca.....	1,204	1,319	0														
Mountain Lake.....	959	1,063	2														
North Mankato.....	939	1,129	0														
North St. Paul.....	1,110	1,400	1														
Olivia.....	970	1,019	1														
Osakis.....	917	1,056	1														
Park Rapids.....	1,313	1,719	1														
Pelican Rapids.....	1,033	1,095	0														
Perham.....	1,182	1,366	4														
Pine City.....	993	1,092	0														
Plainview.....	1,038	1,140	3														
Preston.....	1,278	1,320	1														
Princeton.....	1,319	1,704	1														
Rush City.....	987	1,041	0														
Rushford.....	1,062	1,040	0														
St. Louis Park.....	1,325	1,491	2														1
Sandstone.....	1,189	1,589	0														
Sauk Rapids.....	1,391	1,552	0														
Scanlon.....		1,122	1														
South Stillwater.....	1,422	1,572	0														
Springfield.....	1,511	1,546	0														
Spring Valley.....	1,770	1,573	3	1													
Staples.....	1,504	2,163	3	2													
Two Harbors.....	3,278	4,402	7	2		1		1									
Wadena.....	1,520	1,868	3														
Wells.....	2,017	1,814	*														
West Minneapolis.....	2,250	2,530	2														
Wheaton.....	1,132	1,346	1	1													
White Bear Lake.....	1,288	1,724	*														
Winnebago City.....	1,816	1,553	0														
Winthrop.....	813	1,031	1														
Zumbrota.....	1,119	1,129	1	1													
State Institutions.....			41	10		3											2
Other parts of State.....	1,012,328	1,085,886	747	71	14	87	6	20	6	2	1	5	5	8	8	4	36
Total for State.....	1,751,395	1,979,658	1738	168	25	201	17	39	13	8	1	10	17	26	26	11	99

Still births and premature births, 95 (not included in above totals).

*No report received Health officer not doing his duty

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"POLLINOSIS," OR HAY-FEVER

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MINNEAPOLIS

So much that is theoretical has been written upon hay-fever, its causes and treatment, and so many theories have been proven untrue (these theories are often reiterated despite their falsity) that it is well for us to consider, analytically, the actual facts regarding this disease that we may differentiate theory from truth. When we shall have done this we can better prescribe the necessary care of these patients.

In the sixties, Blackly began to write upon this disease, and in 1873 he published an exhaustive treatise upon hay-fever, in which he described the experiments of others and himself (Blackly suffered from the disease). He proved conclusively that the exciting cause of this disease was the pollen of certain grasses and weeds. He showed that it was never caused by animal emanation and explained that this error arose from the fact that the fur of such animals as horses, cats, etc., is laden with pollen that has gathered from the hay and grasses (cats sleep in the hay-loft, it being a place they can secure their prey).

Before we have any right to say that such a vague thing as animal emanations are causative factors in hay-fever we must eliminate from such emanations that which we know to be the cause, i. e., pollen. The same is true of any other foreign substance, such as dust, etc. To quote from Blackly's writings of forty years ago: After going thoroughly into the subject he concludes, "I need hardly point out that it is not *the dust*, but the pollen which it contains, which

is the active agent." In my own case and that of others who have allowed me to experiment, I have found that with the pollen of ragweed I can bring on an attack at any time of year, but that powders and other like irritants blown into the nose have no more effect upon hay-fever patients out of season than upon those not susceptible.

Blackly supposed that an attack was brought on by the mechanical irritation of pollen grains when they were liberated by the moisture as the grain came into contact with the mucous secretion, and he quotes a description of the changes (motions) that take place in pollen under such conditions, but he states that a certain granular portion of the pollen acts in some then unknown, probably chemical, way to continue the irritation.

Dunbar, writing forty years later, and unaware of Blackly's findings until after the conclusion of his own labors, has gone even further, having proven the kinds of plants which produce the poisonous pollen, and having isolated the toxic portion of the pollen from the non-toxic. He has proven the toxic portion to be a certain albuminous substance which he found to be intensely poisonous to those individuals susceptible to hay-fever, and in using it hypodermatically upon himself, he at once became nearly fatally ill, although the same dose injected into the blood of a human being not susceptible caused no symptoms whatever. Upon later experimentation the pollen toxin killed two animals which were evidently susceptible, the animals dying

within a few moments, thus proving that this albuminous substance is a virulent poison to susceptible patients.

Because in the light of present knowledge hay is now known to bear no relation to the disease known as "hay-fever," and likewise, because roses bear no relation to the so-called "rose-fever," an attempt has been made to name the disease *hyperesthetic rhinitis*. This is not a proper term for this disease, however, for, although hyperesthetic rhinitis does result from the poisonous effect of the pollen, it results from other causes, such as an enlarged middle turbinate; furthermore hyperesthetic rhinitis is only a symptom of this pollen-disease, which affects other mucous membranes, such as the conjunctiva and even the mucous membrane of the mouth. It also causes a similar inflammation of the Eustachian tubes, the middle ear, and, in many cases, the skin. I have many cases of conjunctivitis coming on annually during the rose-fever or hay-fever season where there is no rhinitis present. Diphtheria is usually most manifest in the throat, but it would not be proper to call it tonsillitis unless we attach the distinguishing name indicating the kind of infection, namely, diphtheritic tonsillitis, likewise diphtheritic conjunctivitis, and diphtheritic rhinitis.

The disease is one usually affecting the whole system, giving rise to nasal and skin irritation, insomnia, and various nervous symptoms. It should have a name indicative of the poisonous agent which is its cause, and I beg leave to offer the name *pollinosis*, meaning "pollen-disease," or "pollen-sickness." If, then, it affects the conjunctiva it can be called *pollinosis conjunctivae*, etc.

We have two general forms of the disease, the one caused by the pollen of certain grasses, such as corn, rye, wheat, barley, etc., which flower in June and July, and it is commonly known as "rose-fever," and should be designated *pollinosis aestiva* (summer pollen-sickness), while the autumnal form, caused by the pollen of ragweed and goldenrod generally called "hay-fever," should be designated *pollinosis autumnalis*.

This is not only correct from a scientific standpoint, but has the further advantage of helping to rid the laity, and, I may add, physicians, of the erroneous idea that these summer and fall periodic diseases affect only the nose, and that it is caused by roses and hay, or anything but pollen. Thus in course of time it is even possible that we may, in certain portions of the country where the fall form is now prevalent, prevent

its future occurrence by educating the people as to its cause, who then might inaugurate such a crusade against ragweed as to cause its extinction.

Regarding the predisposing factors: They are absolutely unknown, and any yet given are purely theoretical. Among predisposing causes attributed, we find the following:

One of the commonest is "a nervous element." This phase is a good one because it furnishes latitude to cover our ignorance. It is true that we find this disease in nervous people, but many cases are of a phlegmatic temperament, who could by no means be considered as nervous unless every one subject to hay-fever be so classed because he has hay-fever.

Another cause advanced is "a pathologic change of the nasal mucous membrane," and included in this would be the theory that it is caused by a diseased antrum. It is true that there is a change during the attack, but it is by no means true that anyone with a normal nasal mucous membrane cannot have the disease. We find in most cases upon examination before the attack no abnormalities. I have a number of patients where the eye is affected, and there is little or no nasal irritation; others where the mouth and also the skin show irritation. I have, furthermore, proven by experiment that the application of pollen to the rectum will produce irritation in that location, and Prof. Dunbar's experiment by hypodermic injection also proves that pathologic change in the nose is not necessary. In a late issue of the Journal of the American Medical Association, a writer states that hay-fever is caused by irritation of the conjunctiva, that all other symptoms are reflex, and that it can be cured by wearing smoked glasses. This is as plausible as the nose theory.

The uric-acid-diathesis theory has also been called into use in this disease. Whenever we are puzzled as to a diagnosis or as to etiology and have no pigeonhole in which we can properly place an affection we turn to that ever-present waste-basket, the uric acid diathesis, and cast it in. For two years I tried upon patients, by dieting and medication, the effect of treatment on the uric-acid theory, and I am convinced that it plays no part in hay-fever.

Thus we are left with what knowledge? Hay-fever is caused by an albuminous substance from the pollen of certain grasses and weeds, which, when it comes in contact with certain individuals susceptible for some absolutely unknown reason, brings on the attack. With this knowl-

edge as a basis and theory eliminated, what can we do to relieve the sufferers from this affection?

Where nasal deformities and growths exist, these should be removed, and as near a normal condition as possible established, thereby allowing the patient more comfort. Internal medication is limited. I have never felt that I have had any specific results from the use of internal drugs. Regarding the use of suprarenal preparations: It is true that they give temporary relief in patients who have not become addicted to their use. From experience I have become convinced that suprarenal preparations lessen the natural resistance to the disease and even prolong the attack. Has not every rhinologist had the experience of using adrenalin for the purpose of examination, in patients not hay-feverites, and then had the patient complain, perhaps two hours later, that he was seized by a violent and lasting sneezing attack combined with a profuse watery discharge, with perhaps suffusion of the eyes, etc., indeed an attack similar to hay-fever? It has been shown by experiment that the suprarenal preparations produce a thickening of the vessel-walls and besides the local anemia produced there is the added influence of strain thrown upon poorly nourished parts during the increased height of blood-pressure, an influence sufficient to cause a permanent injury. I have had two cases where this drug was used in large amounts during the season and after long-continued use the hay-fever symptoms did not, as formerly, abate until one and three months after frost, but upon order to stop the suprarenal preparation all symptoms subsided within a week.

The remedy which is a scientific one and is more or less effective in some cases, and would be more so if used under certain conditions, is Prof. Dunbar's antitoxin. We must bear in mind that Pollantin simply neutralizes the poison at the time of its use, and that this cannot last long because it does not remain long in the nose, the secretion soon washing it away, while the pollen, with which the inhaled atmosphere is richly laden, is continually being supplied to the mucous membrane. To procure continuous results we should constantly breathe in sufficient antitoxin, but this is not practicable. I think in the past that we have not used enough, for I have found that those patients who could stand a large amount of it and who used the most received the greatest relief; for instance, one patient who suffers intensely from the disease and goes away only because he has to, has been able to remain at home the past two seasons and has kept quite

comfortable, but has used twenty-five tubes of Pollantin each season.

This disease, while not fatal, should be looked upon more seriously because it often proves a serious menace to the health and so lessens the patient's resistance that chronic asthma and other more serious diseases may develop. Where circumstances will permit we should urge patients to remain away during the entire season, or, if not able to remain the entire season, to remain away as much as possible. To those who are obliged to remain at home I prescribe the following plan, and this is what I have practiced in my own case the past two years with great satisfaction. First, avoid using adrenalin, cocaine, or any of those preparations in the nose. Stay down town during business hours, for there is no vegetation down town and consequently little pollen, and have at home an "immune" room prepared in which there is no pollen and where none is allowed to enter. The superfluous furniture, curtains, etc., are removed, the floor and walls wiped thoroughly, the bedding shaken, and, in order to secure fresh air, cloth having a sufficiently close mesh to prevent the entrance of pollen but to allow the entrance of as much air as possible, is tacked over the open windows. The door is closed day and night, and upon going to bed the patient undresses and leaves his clothing in another room. If an attack has been instigated as a consequence of passing through the streets, Pollantin should be used. It will be found to be very effective under these conditions because there is no opportunity for new poison to enter.

This room will be found to be a heaven for the hay-feverite, and he will sleep normally. It is the disturbed rest which makes the suffering so hard to bear. Furthermore, if the patient during his sleeping-hours is relieved of this suffering he will have more resistance to bear the disease the remainder of the day, and the disease will depart more rapidly in the fall, leaving him in a better condition.

We should not hold out to our patients hope of relief by medication, but should treat them on a rational basis founded upon the knowledge we have at hand and not upon the theory.

Pain is often present for months after a fracture of the leg, especially in elderly people. This is mainly due to the formation of the callus and needs no operative interference. Of course, a subacute osteomyelitis must be kept in mind.—*American Journal of Surgery.*

HYPERNEPHROMA, WITH REPORT OF FOUR CASES*

By E. L. TUOHY, B. A., M. D.

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DULUTH

Before entering upon a discussion of the subject of this kidney tumor, I wish to give the case-histories.

CASE 1.—Mr. B., aged 43, a teamster by trade, first consulted his physician in July, 1905.

At that time his family history was said to be negative.

As to his previous history: He had been well up to two years before. At that time he had a sudden and very severe attack of pain in the back. Blood appeared in the urine shortly after the attack. As to its amount and the exact nature of the pain, he could give no definite information. But after that he had intermittent and similar attacks of pain and began to pass a great deal of clotted blood. He recalled that the pain seemed to extend downward along the course of the ureter. The severity of the pain later became lessened, but the hematuria persisted. He gradually lost fifty pounds in weight and became so weak that he had to quit work.

With this history operation was advised to determine the cause of the hematuria. A calculus in the kidney pelvis was strongly suspected. At operation the kidney seemed normal in size. It was incised, and at the upper pole a reddish-white mass about 4 cm. in diameter was discovered. It was very friable and oozed blood very freely. It projected slightly into the kidney pelvis.

A fair margin of healthy kidney-tissue was removed with the growth, and the wound was sewed up with a drain in the kidney pelvis.

He made an uneventful recovery. Three months later he was at work and had regained a full measure of health. Furthermore he has remained perfectly well ever since.

Microscopical examination of the tissue of the tumor showed it to be a typical hypernephroma.

CASE 2.—Mr. B., aged 42, a railroad man.

The following history was elicited in July, 1906:

Family history was negative. In his past history he gave a clear and definite history of syphilis, but he had received very good treatment for this condition for two years. About nine months previously he had noticed a "lump growing in his left side." The previous winter

he had spent in a hospital where he received very active antisyphilitic treatment, although it occasioned him much gastro-intestinal trouble.

The tumor was over the region of the spleen, was quite painful, and was said to be hard. An intermittent hematuria was a prominent symptom along with the rest, and it resulted in a marked anemia. His hemoglobin was said to be 30 per cent.

In July, 1906, I was requested by his physician to make a blood-count, with the result that he showed a hemoglobin estimate of 38 per cent. Red-cell count, 2,120,000, and leucocytes, 9,400. Stained specimens of the blood showed some poikilocytosis, a few normoblasts, but no megaloblasts. The leucocytes bore a normal relation to each other.

Thus we could definitely rule out a splenomyelogenous leukemia, and the probability of a pernicious anemia.

Several physicians saw him, and all considered the growth an enlarged spleen. With this fallacious preconceived idea, and with this history of exacerbations and remissions of the disease, I was led into the erroneous diagnosis of splenomegaly, or Banti's disease. The hematuria was explained as one of the phenomena of that disease.

On this supposition removal of the large spleen was thought unwise. X-ray treatment was begun with very favorable results. He improved promptly and remarkably. The tumor so far decreased in size that he was able to return to work. His hematuria persisted but to a lesser degree. The lumbar pain diminished.

Nothing was heard of him again until March, 1907. He was then found very much worse. Ascites had developed, and he was very emaciated and weak, and evidently about to die. He died one month later, and, fortunately, we were able to secure an autopsy which gave the following findings:

The spleen was perfectly normal. The large tumor was found to be a kidney growth. There were definite metastases to the mesoenteric glands and liver. The tumor was 10 inches in one diameter and 8 inches in the other. On cross-section the capsule was found to be tough and firm. A large part of the center was broken down, yellowish, semigelatinous material. Blood oozed

*Read before the Duluth and Superior Academy of Medicine, November, 1907.

freely from the cut surface and oozed on pressure. At the entrance of the ureter a substance somewhat resembling kidney could be made out, but it bore little resemblance to the normal organ.

Microscopically the tumor was a hypernephroma. The metastases all showed the same structure.

CASE 3.—Mr. O. A. B., aged 53. An active business man who sought treatment in May, 1907. He had lost 40 pounds in four months. He complained chiefly of gastric distress, insomnia, and severe constipation. He vomited a great deal and usually about three hours after eating.

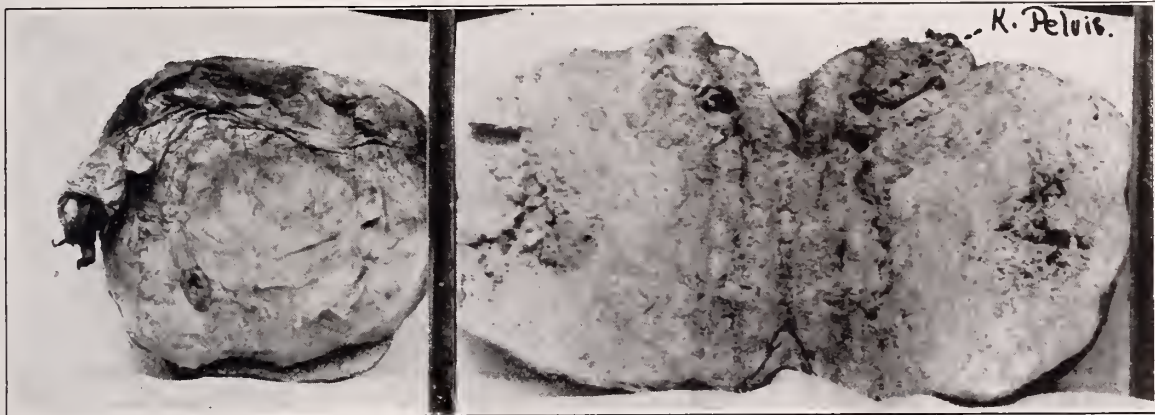
as much breaking down as Case No. 2, but this was no doubt due to its shorter course of growth.

(Later reports from this patient indicate that he is having a recurrence.)

CASE 4.—Mr. H., aged 47. First came for treatment in January, 1907. Had lost 40 pounds in six months.

In brief, he gave the following history:

Three years before he had had a marked attack of hematuria. At times ever since he had noticed blood in his urine. He began to have marked, dull pain in the left lumbar region. Three months previously he was operated upon for a varicocele. Evidently this was done in a



Case 2.—Fig. 1. Side view of tumor.

He had marked pain in the right lumbar region, and examination showed a deep-seated mass running downward about midway between the costal margin and the upper part of Poupart's ligament. An examination of the stomach and its contents showed a total acidity of 50; free HCl, 21; no lactic acid or occult blood. The stomach position was normal and the pylorus passed air freely. The urine showed nothing abnormal, but on being segregated it was found that the right side flowed nothing while a copious flow came from the left side.

Nephrectomy was decided upon and carried out.

The kidney was found to be the seat of a large tumor. It had not involved the entire kidney, but had greatly enlarged the upper pole. This portion was 20 cm. in diameter. It was pushed upward and backward and was firmly attached to the body-wall. The underlying veins were greatly enlarged, making removal difficult. No local metastases could be made out near the field of operation.

This tumor proved upon examination to be a typical hypernephroma. Its interior did not show

Fig. 2. Tumor sectioned and opened up.

vain attempt to help his lumbar pain. He grew weaker and more and more sleepless; lost his appetite, and was very constipated.

On examination a mass as large as the clinched fist could be felt in the region of the left kidney. It was hard, only slightly movable, and the tissues around it felt indurated. No metastases could be felt elsewhere, but the abdomen was rigid. The urine was negative.

Shortly after this, cystoscopic examination of the bladder with ureteral catheterization showed that the left kidney had ceased to functionate.

The diagnosis was made of a malignant growth of the kidney, probably a hypernephroma. He was seen by several good physicians. His condition was so far advanced that at no time was operation advised.

He grew progressively weaker and more anemic. Ascites developed. He died in August, 1907.

Unfortunately, an autopsy was refused. Still, I think the clinical diagnosis in this case is undoubtedly correct. The duration of the disease rules out sarcoma. Stone in the kidney might be considered, but I think not seriously.

Hypernephroma is coming to be more and more well known; still the literature contains relatively few reports of cases or allusions to the condition. This constitutes my chief reason for reporting this small series. A study of the cases points, above all else, to the necessity of an early diagnosis, for, as illustrated by Case 1, even with a partial removal of the kidney there has been no recurrence after three years. Case 2 shows the necessity of more care in diagnosis. Undoubtedly, had a more careful search been made for the cause of the man's hematuria his life might have been saved. Cases 3 and 4 show the inevitable results of further delay. It may be said, however, that Case 3 seemed to run a very rapid course.

The origin of hypernephroma is quite definite. It arises from the fetal inclusions of elements of the adrenal gland within the kidney, usually the upper pole. This, of course, following the well-known dictum of Virchow.

Grawitz, writing in 1883, concerning this kidney growth, pointed out its relation to the adrenal gland and also brought out the fact that similar fetal nests might develop in other adjacent organs, such as the ovaries or broad ligament. Birch-Hirschfeld, in 1896, applied the term *hypernephroma* as it is now used.

Pathology and Morbid Anatomy.—It is not hard to understand how readily some of the adrenal gland may be included in development within the kidney; nor is it easy for us to estimate how often this accident happens. But I think we may say that it is only when these inclusions are stimulated to tumor formation that we have the condition of hypernephroma.

The growth may be almost of any size. On section it will usually be found to be very vascular, the blood spaces being large. These yellowish and reddish spots stand out and have been likened to the surface of a ripe strawberry. As the growth enlarges, however, degenerated areas or cystic spaces are wont to occur. Into these spaces the connective-tissue septa may be seen projecting as if the softer tumor tissue had fallen away.

Metastases occur both by the lymph and the blood streams. As the growth breaks through its local bounds it soon involves the retroperitoneal glands. The liver usually is soon involved and occasionally the shafts of long bones. (Scudler)

Microscopically it copies in a vague way the structure of adrenal tissue. As to whether to

class it with sarcoma or carcinoma has been a mooted question. Its likeness to carcinoma would appear to arise from the fact that the cords of cells copy in general the formation of epithelial rows. This likeness is therefore more apparent than real. It is mesoblastic in origin. It would appear therefore to be a modification, if we may speak of such, of sarcoma. Sections of the tumor show, in addition, many blood spaces, as indicated above, and a peculiar tendency to a glycogenic infiltration, which is readily brought out by the usual fat stains.

Symptoms.—General texts have very little to say about this condition, and there are few monographs. I shall speak chiefly of the symptoms as shown in this series, and suggested by a study of the same. *Hematuria, lumbar pain, renal colic, and tumor* in the kidney region should all make us think seriously of hypernephroma. Still, any or all of these may be absent and various others may be present, depending largely upon the pathology of the condition present. Hematuria occurs when the growth projects into or communicates with the pelvis of the kidney. The histology of the growth readily explains the ease with which they bleed. One-sided lumbar pain, particularly if it seems to follow the course of the ureter, is a valuable sign. Renal colic means that a goodly sized clot is being passed. It will not be found to be as severe as that of passing a stone. We should not wait until a tumor can be felt to make the diagnosis. Senn speaks of the tumor as having a peculiar "resiliency." The growth being at the upper pole usually the tumor is doubly hard to feel in the beginning, and many have been found at post-mortem which might have been dormant for years.

Hence, in making a diagnosis we shall have to depend upon an association of symptoms; and, after all is said, probably the earliest symptom in the greatest number of cases will be hematuria.

Of course, blood may come from any part of the genito-urinary tract: (a) urethral, (b) prostatic, (c) bladder, due to tuberculosis, papilloma, carcinoma, or stone, (d) from either kidney blood may flow in several conditions.

But with the refinement now attained in diagnostic instruments it is possible to explore the bladder with a cystoscope, to catheterize each ureter, or to segregate the urine from each side. In this way it is definitely possible to get at the source of the blood and to further test the functioning power of each kidney,—a very important

procedure when a possible nephrectomy is contemplated.

If blood comes from a tubercular kidney it will usually be associated with pus, and it is possible after frequent attempts to find tubercle bacilli. Or we may utilize some of the recent developments of the tuberculin reaction, or animal inoculation-tests. We would have in addition the history, clinical course of the disease, etc.

If it came from kidney stone the nature of the attacks would be considered. There might be between attacks of colic only a few washed-out red-blood cells. And, lastly, a good skiagraph will show up the majority of kidney stones.

The blood appearing in a case of hypernephroma is apt to be mixed with a mass of epithelial debris which comes undoubtedly from the degenerating centers in the tumor. The Sudan III stain may show fatty globules in these cells.

Treatment and Prognosis.—The treatment is removal of the kidney in which the growth is found. Any tumor having such malignant pos-

sibilities is always surgically malignant. When located and diagnosed early it affords a most excellent prognosis, because the kidney admits of such thorough removal, and there is no tendency to early lymphatic involvement. But this applies only to the growth before it has progressed, and probably broken into the retroperitoneal structures. After it leaves the kidney it has all the viciousness needed to rapidly kill.

The removal of one of these large tumors is attended with great technical difficulties. The tumor is fastened down firmly, the underlying veins are often enlarged, and a profuse hemorrhage is imminent. Such a mass of even pathological adrenal tissue must exert a profound influence upon the blood-pressure by its internal secretion. Case 3 had great variations in blood-pressure after operation, hardly accounted for by any other hypothesis.

I wish to acknowledge my indebtedness to Dr. A. J. Braden for the opportunity to study and report Cases 1 and 2, and to Dr. C. A. Stewart for Cases 3 and 4.

HOME TREATMENT OF PULMONARY TUBERCULOSIS*

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MINNEAPOLIS

Pulmonary tuberculosis, considered from an economical, social, or medical point of view, is by far the most important disease that afflicts the human race. It is emphatically a disease of all times, all countries, and all races; no climate, no latitude, no occupation, no combination of favoring circumstances affords perfect immunity. Remorseless in its course, it invades alike the homes of the rich where every comfort abounds, and the abodes of the poor where the misery of disease is rendered more miserable by pangs of poverty and neglect.

In the brief time assigned me I purpose directing your attention to the treatment of the tuberculous patient in his own home, using the title "Home Treatment of Pulmonary Tuberculosis" in its restricted sense.

In this commonwealth fully 95 per cent of all consumptives are now treated in their homes, including the premises in the term "home," and from every indication at this time will in all probability continue to be so treated. If this be true,

the importance of elaborating and perfecting this method of treatment cannot be too forcibly emphasized, especially as this disease attacks by preference the poorer classes.

Pulmonary tuberculosis is a curable disease if detected early and promptly and properly treated; hence, the vital necessity of an early diagnosis. The importance of the prompt detection of the early manifestations of consumption cannot be too forcibly emphasized; consequently, a grave responsibility rests upon parents, relatives, and friends—the responsibility of eternal vigilance and watchfulness, in order to detect the early indications of consumption, and the further duty of seeing that these tuberculous suspects are brought to the family physician for examination and treatment. It is not the duty of the family physician to enter the home in search of patients, but it is the duty of parents and relatives to be vigilant and alert, in order that they may detect the early manifestations of this insidious disease and bring the tuberculous suspect to the family physician for careful investigation, thereby affording the only opportunity for recovery.

*Read before the Upper Mississippi Valley Medical Society, at the State Sanatorium, July 21, 1908.

Even with the greatest care and alertness upon the part of the laity in detecting the early indications of tuberculosis, little good will be accomplished unless the family physician is willing to give the necessary time to the investigation of these cases and possesses the ability to correctly diagnose them. On the family physician—"the man behind the gun"—rests the grave responsibility of the early detection of consumption and the cure of the disease, the latter being possible by means only of an early diagnosis.

In addition, the family physician, in the capacity of adviser, is charged with the still more sacred duty of advising parents relative to the rearing of children, in order that they may escape early infection and develop bodies having sufficient resistance to withstand infection later in life.

We are concerned to-day with the treatment of pulmonary tuberculosis in the patient's home, where the vast majority of all patients must be treated.

The first essential is an early and correct diagnosis. This is possible only by means of a careful history and a painstaking physical examination of the chest, including a microscopical examination of the sputum, and, in obscure cases, the use of tuberculin. The family physician who is unwilling to give the necessary time and care to the examination of a tuberculous suspect, in view of the gravity of the disease, should be discarded in favor of one who is willing to perform his duty to the patient and the public. I am pleased to say that in my experience I have seldom found this loyal, devoted band of unselfish workers wanting in the slightest degree, but no physician can detect the disease without seeing and examining the patient, and here the great obstacle to successful treatment arises. Delay and procrastination on the part of the patient in seeking advice and treatment, permit the disease to gain such a foothold before he consults a physician as to positively preclude the possibility of cure.

The physician, having detected the existence of consumption, should frankly explain to the patient the exact condition present, unless there be urgent reason to the contrary. Also, if it be an incipient or beginning case, inform him that his case is a curable one, provided he is willing to do as directed.

The essentials necessary in the successful treatment of consumption are four in number:

1. An early diagnosis.
2. Sufficient nutritious food to insure perfect nutrition.
3. Pure, fresh air in abundance, day and night.
4. Systematic regulation of rest and exercise, as indicated in each individual case.

The importance of proper diet in pulmonary tuberculosis has been dwelt upon since the time of Hippocrates. We now know that the healing of a tubercular process is largely dependent upon the state of the nutrition; consequently, the question of diet becomes of the very first importance. The nutrition of the patient is a reliable guide as to the progress of the disease. If the patient is taking sufficient nutritious food, is digesting and assimilating it, and is gaining in weight, the outlook, or prognosis, is good; if the reverse is the case, the outlook is bad. Persistent inability to digest substantial food is always an unfortunate condition. Irritability of the stomach or faulty digestion should receive early and prompt consideration. In every instance the tuberculous patient should be instructed to keep the teeth and mouth clean and to scrupulously avoid swallowing the sputum, in order to avoid intestinal infection.

The appetite is usually impaired and often capricious; consequently, it is not a good guide as to the quantity of food to be taken. While it is true that in most cases more food can be digested than the appetite demands, great care must be exercised not to overtax the digestive system. Here, as elsewhere, the physician should remember that he is treating an individual suffering from disease, and should consider the individual, as well as the disease, in deciding the question of diet. This question of proper feeding is the most important problem connected with the treatment of pulmonary tuberculosis. I am convinced that many consumptives during the past few years have been hurried to their graves by over-feeding.

The quantity of food allowed should be governed solely by the patient's digestive capacity and the adequacy of his kidneys. Three generous meals,—at 7:30 A. M., 1 P. M., and 6:30 P. M.,—consisting of eggs, meat, milk, cream, butter, fish, fowl, nuts, well-cooked cereals, and wholesome vegetables, with a glass of rich milk and one or more eggs at 10 A. M. and 4 P. M., will supply all the food the average consumptive requires, without disturbing his digestion. Eggs, meat, milk, and cream will continue, as in the past, to constitute the bulk of the consumptive's daily food. Eggs may be served raw, boiled, poached, shirred, or baked. Meat may be broiled, roasted, or scraped. Milk and cream should be drunk very

slowly, or, still better, sipped. Additional cream may be used on cereals and fruit. Butter is one of the most easily digested fats; consequently, consumptives should be encouraged to partake freely of it, and also of nuts. In case the digestion becomes disordered and the appetite lags, omit eggs, milk, and meat for a few meals.

1. The majority of tuberculous patients should take food at least five times in twenty-four hours.

2. Never eat when suffering from bodily or mental fatigue or excitement.

3. Lie down and rest at least a half hour before the mid-day and evening meals.

4. Take only a small amount of fluid with the meals.

5. The starches and sugars in excess should be avoided; also all indigestible food-substances.

6. Eat slowly, masticate thoroughly, and never exceed four or five articles of food at one meal.

7. Last, but not least, all food should be nicely prepared and daintily served.

Before leaving the subject of diet, a word in regard to the use of alcohol. It is erroneous, if not foolish, to believe that alcohol has or can have any specific influence or action in combating consumption. The consumptive needs no alcohol, and in the vast majority of cases is better off without it. Alcohol should never be taken except on the advice of the medical attendant.

Permit me, before dismissing the all-important subject of diet, to again call attention to the pernicious custom of too frequent feeding, as well as to the danger of too large meals. In my judgment, absolute harm results from overfeeding; consequently the failure of the medical attendant to accurately measure the digestive capacity of his patient frequently substitutes failure for success.

How to secure the second essential—pure, fresh air in abundance, day and night, for the consumptive—is often a difficult problem, especially in our rigorous climate. The majority of females and children will, of necessity, have to be sheltered in the home or an annex in the form of a screened porch. The room selected should have a southern exposure and be provided with sufficient windows to insure perfect ventilation, and it should be void of carpet and all unnecessary furnishings. During the winter season a window-tent, or fresh-air chute, may be used to secure fresh air at night. The window-tent has some strong features in its favor, especially in severe weather,

and in the case of a patient of moderate means, occupying a room in common with other members of the family, which he is able to do without interfering with the comfort of others occupying the room.

The screened porch, with heavy canvas curtains, as an annex to a properly warmed room, supplies the ideal sleeping-room as nearly as it can be attained in direct connection with the home of the patient. It should contain a single bed, well supplied with thick, warm blankets and be very simply furnished, avoiding carpets, drapery, etc. The tent is especially attractive to male patients and in my judgment is the ideal habitation for the consumptive, provided it is properly constructed, suitably located, and receives proper daily care in respect to ventilation and cleanliness. It should be made of good material and be so constructed as to permit of perfect ventilation. It should have a good, tight floor, raised at least eight inches above the ground, and be furnished with a single bed, with a woven-wire spring and ample clothing. In addition, the tent should be furnished with two small chairs and one small rug. It should be located on an elevation, on sandy soil, facing south, and be provided with a fly ten inches above. During the autumn and winter it should be provided with a small stove, the same to be used to regulate the temperature as directed by the medical attendant. The tent inhabitant should remember that he takes into his lungs one-seventh more oxygen at the freezing point than he does on a hot summer day, and govern the temperature of the tent accordingly.

Theoretically, the patient should live in the open air, or breathe pure air all the time. This is, however, not entirely practical, especially in our rigorous climate. He must have a warm place in which to eat, dress and undress, bathe, and arrange his toilet. The patient should spend from twelve to sixteen hours in the open air driving, walking, or in other recreation, or, well wrapped in warm clothing, on the open porch or veranda, summer and winter.

The fear of taking cold, the great bug-bear of the consumptive, is largely groundless, provided the open-air plan of treatment is gradually inaugurated, as it should be in all cases. The advantage and value of pure, fresh air are promptly noticed in the improved appetite and better assimilation of food. Patients sleep more soundly and awake refreshed. The temperature is also influenced favorably and night-sweats lessened.

Exercise.—There is no agency employed in the treatment of consumption capable of more

abuse, and fraught with greater disaster to the patient, than exercise. The laity, as well as many physicians, seem imbued with the idea that indiscriminate exercise in the form of "roughing it" enhances a cure. Respiratory exercises may be equally pernicious when carried to excess, and they should be indulged in only under the advice of a physician.

Rest and exercise must be outlined by the physician in each individual case. There is little danger that the patient will not get sufficient exercise, but great danger in the other direction. Injudicious exercise is responsible for more failures than all other errors combined. The majority of consumptives feel so well that it is very difficult to keep them within safe bounds. If the maximum daily temperature is 100 degrees or more, absolute rest should be enjoined until the afternoon temperature is not above 99 degrees for at least five days in succession, at which time graduated exercise may be cautiously commenced.

Walking is the best exercise and most easily regulated, but in every instance it should be prescribed and directed by the physician.

An intelligent consumptive may be trusted to carry out instructions with regard to living in the open air and, to some extent, be left to his own judgment in the matter of diet, but no consumptive, however intelligent, can be safely trusted in the matter of restricted exercise. Even when the patient is under constant supervision, with complete chart before him, the physician finds the regulation of exercise extremely difficult, and he not infrequently errs in judgment,

but, fortunately, his errors are less serious in this disease than some others, for the reason that he extends the amount of exercise so cautiously that any error on his part can be corrected before serious damage is done.

The family physician should advise and direct each and every tuberculous patient carefully as to the proper disposal of the sputum and feces, the latter, especially, in all cases of intestinal infection; and he should repeat his instructions from time to time.

Pulmonary tuberculosis is an exceedingly grave disease, and no medical man who views it in any other light can perform his duty to the patient and the public. The writer believes that the failure to secure co-operation and obedience on the part of tuberculous patients is largely the fault of the physician in charge. In dealing with tuberculous patients the physician should be an autocrat as respects the carrying out of the essentials of treatment.

Briefly outlined, the essentials of the successful treatment of pulmonary tuberculosis in the home demand:

1. An early diagnosis.
2. Sufficient nutritious food to insure perfect nutrition.
3. An abundance of pure, fresh air, day and night.
4. Systematic regulation of rest and exercise, as indicated in each individual case.
5. Positive control of the patient, in order to protect the interests of the patient and the public.

TREATMENT OF EXOPHTHALMIC GOITRE*

BY HENRY WIEDOW, M. D.

WORTHINGTON, MINN.

I believe I can safely say that there are few subjects in the realm of medical knowledge that are so important, and yet about which we know so little, as the subject of the ductless glands. Investigators from every field are busy trying to solve the mystery that surrounds these organs. Much has been done in the last ten years, and now we are just beginning to see in the twilight some of the important things connected with these structures. I quote from Beebe, who says: "So enthusiastic have some observers be-

come in their belief (speaking of the thyroid) in its primal position in physiology, and also, on the part of a few, in therapeutics, that one is almost tempted to compare its supposed potency to the famed fountain of eternal youth, whose magic healing and rejuvenating properties was the hope of the aged infirm explorer. I must confess myself among those who share the belief that the thyroid is a true gland, whose proper functioning plays such a part in the physiologic rhythm of the body that it stands very near to, if, indeed, not in, the list of viscera to which the term *vital* is properly applied."

*Read before the Southern Minnesota Medical Society, July 16, 1908.

The best fruit from the work carried on in the past ten years has been in differentiating the parathyroids from the thyroid proper. So much stress has been laid on these three or four little bodies called the parathyroids that one operating upon the neck goes about with fear and trembling lest he do injury to these bodies with disastrous results. They are small, pinkish bodies, from the size of a small shot to that of a pea, and vary in number from two to four, but there are usually four. They are located, as a rule, back of the posterior capsule of the thyroid, but may be found in the thyroid itself in its posterior lateral lobes. It is the consensus of opinion to-day that removal of these parathyroids or injury to them results in acute tetany and death, as a rule. Life may be prolonged by giving of the above gland extract, from one to three weeks. But the removal of the thyroid results in cachexia and other nutritive disturbances, which run a chronic course and eventually end in death.

The consensus of opinion to-day is that exophthalmic goiter is a hyperthyrea; and to combat this excess of thyroidism is the basis of our modern therapy. The line between the medical and the surgical treatment of exophthalmic goiter is at least plainly visible, if not as sharp as in some of our better understood diseases, such as appendicitis, etc.

The medical treatment should be along the line, first, of overcoming the dominant symptoms, which are tracheocardia, nervousness, gastro-intestinal disorders, and often anemia with loss of weight. With every case that comes to us for treatment we should remember that about twenty-five per cent of these patients get well without, or in spite of, treatment. In carrying out our medical treatment, we must insist, first of all, upon rest. I mean by this, not rest by taking life a little easier, but absolute rest in bed. An ice-bag placed over the neck and region of the heart is beneficial. The diet should be free from meat. The bowels should be kept so that at least two good movements a day are had. The putrid condition of the gastro-intestinal canal of many of these patients needs our strictest attention. We recall that many of the earlier authorities regarded this as the prime cause of exophthalmic goiter. The best intestinal antiseptic of which I know anything is the oil of eucalyptus, given in two-drop doses frequently, and it is very beneficial for these sufferers. Of the long list of drugs recommended, belladonna takes the lead and, I believe, does some good in most cases if pushed to its physiologic tolerance. Much has

been done concerning the serum therapy, but nothing practical so far has been accomplished in this direction. If treatment has been carried out on the above lines without improvement the case then should be considered surgically.

Dr. C. H. Mayo, who has operated upon over 700 of these cases, gave some interesting facts at the Chicago meeting of the A. M. A. He and his colleagues had gone over the list of their last 200 operated cases of exophthalmic goiter and sent out 190 letters. Ten patients had died as the result of the operation, making the mortality 5 per cent. They had received 167 replies as follows: 70 per cent had been cured, 89 per cent had been either cured or greatly benefited. A few more cases brought the percentage up to 94 per cent cured, greatly improved, or somewhat improved.

With such splendid results as the above figures show, what physician here can deny his patients the privilege of an operation after other methods have failed? Mayo divides his operative cases into three classes: first, there are those patients whose symptoms are mild, which do not justify the radical operation of removing one-half of the thyroid, but simple ligation of one or both of the superior thyroid arteries and veins is usually sufficient; second, there are those cases on whom it is dangerous to perform the radical operation because of the advanced stage of the disease when there is apt to be degenerated heart-muscle, nephritis with albumin in the urine, and fatty degeneration of the liver. Such cases might be operated on by first ligating the vessels on one side under local anesthesia and then later repeating the same on the other side. In this way some very bad advanced cases can be greatly benefited. The other class of cases are those on whom the radical operation of removing the right and middle lobes can be done with the best of results. Kocher's mortality on the simple cases of goiter is 0.4 of one per cent.

In summing up, we see that the treatment of exophthalmic goiter is both medical and surgical. A large percentage of these cases are curable; and it is of the utmost importance that we do not delay surgical means when other treatment has failed.

A mesenteric cyst may give the same signs as a small ovarian cyst. Mesenteric cysts, although movable, are usually attached to the ascending colon. When the colon is dilated a direct relation can be made out between the gut and the tumor. —American Journal of Surgery.

CHRONIC INFECTIOUS METRITIS*

By C. O. COOLEY, M. D.

MADEIRA, MINN.

I believe it is one of the most difficult tasks in the pursuit of any of the sciences, to deliver a satisfactory president's address, comprehending, as I must, how universal it is when new theories are announced, and especially those theories that add to the old, that each one of us scans, tabulates, and correlates them until suddenly the theories are relegated to the forgotten past. Therefore, to present either the new or the old theory would be to inflict punishment or dam the aggressive current; hence, necessity compels me to review my experience and to endeavor to find something in it that may add to science.

In my experience I find so many phases, and especially blunders, in the retrospect that there is no very cordial invitation to linger at any one point, and in hurrying from period to period I fully appreciate the story of the "will o' the wisp."

It is with due recognition of my shortcomings that I ask your attention, for a few minutes, to my story of the impressions and conclusions I have acquired during my experience in "Chronic Infectious Metritis."

This is a disease beginning usually shortly after marriage and ending at or near menopause. It handicaps the maternal energies and robs the offspring of so much in early life that, later, they are unable to bear the burdens of modern civilization. It is so masked and insidious that the diagnostic features are largely obliterated by the symptoms of the lesser neuroses. In fact, it is commonly so classed and treated as such, and therefore the early symptoms are rarely recognized until we have more or less local tenderness, pain, and peritonitis, and then we are fully convinced of the period or progress of the metritis.

It may be well to consider the significance of the lesser neuroses and their probable etiology; for under such conditions we have, many times, prominent symptoms, such as menorrhagia, traumas, and infection incident to gestation, gastro-intestinal or gastrohepatic, so well marked that the diagnosis of any one is sure to follow coincident with an attack of visceral spasms preceded by slight vertigo. With increased bodily activity or diminished resistance, the attacks are more frequent and severe, and especially (and

this usually occurs) with impaired intestinal functions and elimination. The attacks are still more depressing with a variable hemoglobin percentage and marked anemia. Do not such infections so gradually absorbed, producing slight intoxication and exhaustion, impress you that they account for much in the so-called lesser neuroses?

In other cases the same infections prevent the hepatic-intestinal functions and increase the microbic activity within the hepatic ducts, as in pyemia following suppurative appendicitis or pyosalpingitis. Would not this impress you as one of the causes of the increased frequency of gall-stone disease in women and especially during the usual morbid activities within the puerperal period?

The entire pathological condition may be within the endometrium. This one organ, the uterus, which, probably of necessity and because of its functions and anatomical formation and position, is the most vulnerable organ within the female system; for it is in these infectious cases that we find, more or less frequent at or about menopause, the uterus somewhat adherent, enlarged, and occupying a much lower position, with evidence of lacerations filled with scar-tissue; erosions of the cervix in ulcerative, granular, and cystic degeneration; the cervix highly congested, tortuous, or widely dilated with mucopurulent excretion with or without hemorrhagic tendencies.

Again, there are certain morbid changes within the uterus that are becoming much more frequent and fatal, and the recognition of them is essentially necessary for their management, particularly before the clinical features are marked sufficiently to make a physical diagnosis. A clear, comprehensive past history and present condition, particularly that of the blood, must decide for a radical interference or a procrastinating prognosis which may turn the balance against the patient. Malignant metamorphosis of the uterus and its appendages certainly is increased very largely by these chronic infections and anatomical abnormalities in and about the uterus. It has been my sad misfortune to know that the more virulent and frequent the acute infections occurred, the more often the patient succumbed to malignant disease in later life.

While the positive causes of malignant dis-

*President's address, read before the Southern Minnesota Medical Association, Owatonna, August 6, 1908.

ease are unknown there is no doubt that the contributing causes are well known. It is certain that cancer implantations upon chronic ulcers are common, as well as upon scar-tissue and, in fact, upon any surface which is in continuous irritation. The various bacteria present and

their behavior upon these imperfect surfaces also contribute towards the production of malignant disease. It is at this point that meddling gynecology does a great deal of good. It is in such cases that perfect asepsis, drainage and curettage prohibit malignant development.

PHYSIOLOGIC CHEMISTRY AND DIETETICS

CONDUCTED BY

RICHARD OLDING BEARD, M. D.

Professor of Physiology, University of Minnesota

ASSISTED BY

J. P. SEDGWICK, B. S., M. D.

Instructor in Physiologic Chemistry, University of Minnesota

THE ELIMINATION OF THE BROMIDES

Recent work by Hale and Fishman, of the University of Michigan, tends to show that the bromides are all practically alike in their rate of excretion; that they tend to accumulation in ratio with the frequency of administration; and that they are slower of removal than the iodides. The volume of the urinary output does not determine, moreover, an increase in the elimination of the bromides.

BEARD.

THE CLINICAL STUDY OF THE SALIVA

Clinically, the study of the saliva and of the salivary glands will repay a larger share of attention than has been bestowed upon it. In the laboratory, several phases of this study have been the subject of recent research.

One result of the experimental work which has been done in this field is a tendency to the limitation of the secretory functions and to a better recognition of the excretory functions of the glands of the salivary system. Carlson and Ryan, of the University of Chicago, go so far as to question the actual secretion of an amylolytic ferment by these glands in certain animals and regard the ferment present as due to a simple excretory removal of a preformed diastase from the blood. While this may prove true of the carnivores, it is doubtless not true of the human saliva or of that of the herbivores.

There is certainly good reason to believe that the salivary system is only one of the excretory channels through which such easily eliminated metabolites as the cyanides may be removed. No secretory significance is any longer attached to the presence of the sulphocyanides in the saliva.

Carlson and Ryan have also undertaken to

show, by a series of experiments, that glucose may be present in the saliva as a result of its excess presence in the blood. This is unquestionably true. The writer has found, again and again, in cases of diabetes, that the saliva reacts readily and constantly for sugar. The diminution of dextrose in the urine to a certain point will be accompanied, however, by its disappearance from the salivary output—a fact which argues against the conclusion of Carlson and Ryan that it is not a product of true secretory activity, but of simple filtration. The selective function of the salivary cells for sugar fails of response at a point at which the cells of the renal glomerulus still answer to the excess. Moreover, under these conditions of the salivary secretion of sugar, the output is increased by the previous stimulation of sympathetic nerve-fibres supplying the gland, at least, in the diabetic dog; the effect of such stimulation being to increase the constructive metabolism of the salivary cells and, incidentally, their selective power for glucose.

It has long been recognized that certain therapeutic agents are eliminated, in part, by the salivary glands, and this fact has been utilized to test the rapidity of absorption from the stomach or the intestinal tract. Better and larger use might be made, with clinical profit, of this method of study.

Among drugs susceptible of salivary excretion, are the iodides and the bromides; and the rate of their elimination may be made a test of the imminence of intoxication. It is a curious fact, recently worked out by Neilson and Terry, of St. Louis University, that in the presence of the iodides the action of the ptyalin of the saliva is increased.

BEARD.

THE LIMITED CLINICAL VALUE OF THE CHEMICAL EXAMINATION OF BREAST MILK

Although the writer was studiously careful, in a former note in these columns (Feb. 1, 1907,) not to appear as an advocate of the clinical value of the chemical examination of breast-milk, he finds, from time to time, that it is taken for granted that he considers such examinations of importance.

The article on "Inaccurate Methods of Milk Analysis," referred to above, was written in condemnation of the crude methods of the cream-gauge, lactoscope, and hydrometer. Accurate analyses of human milk are of undoubted value in the theoretical study of this secretion and in advancing our understanding of infant metabolism, but our knowledge is not yet far enough advanced to make them of general value as an adjunct in the treatment of clinical cases.

Several factors have led to this exaltation of the clinical value of such analyses. Excellent clinicians who have been over-impressed with the importance of minor differences in the percentage-composition of the infant's food have advocated these analyses on theoretical grounds. Those, however, who have faithfully attempted to use such analyses as a basis for treatment have met with disappointment. Why is this true?

The lactose content varies within a small range.

The protein content seldom, if ever, goes so high that the infant is harmed thereby.

The fat content of the sample varies, from 2 per cent to 12 per cent, in the milk from the same breast, depending on the manner of taking the sample, therefore conclusions derived from such results are often of little value for basis of treatment.

The significance of the salt content is not yet well enough understood to make analyses of value for clinical purposes.

The studies of the more complex biological characteristics of the milk are yet too incomplete.

The most common error is one which the writer's clinical records show almost daily. The milk is said not to "agree with the baby." Weighings before and after nursing show that the babe gets but 45 or 55 grams of food. The "discomfort after nursing" disappears as if by magic when the calorie deficit is made up by mixed feeding.

It is not safe to be led by clinicians alone in regard to chemical matters or by chemists alone in clinical matters. In the present state of our knowledge the following statement by Finkel-

stein, who is perfectly competent in both directions, is of value:

"A disturbance of the breast-feeding caused by qualitatively unfit milk, concerning which so much is said in lay circles and in the literature, will rarely be an indication for especial procedure for him who seeks carefully for quantitative errors and diseases of the child itself in each abnormal case. Personally, I cannot remember that I have ever seen a case that belongs in this category."

SEDGWICK.

BOOK NOTICES

NEUROGRAPHS: A series of neurological studies, cases and notes. Edited by William Brown-ing, vol. i, No. 2, pp 164. Brooklyn: Albert T. Huntington, 1908.

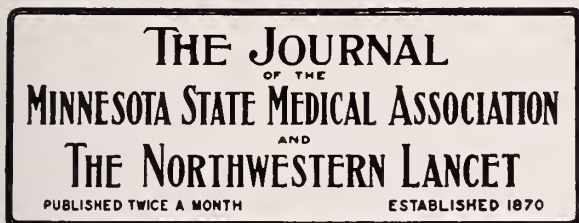
This volume of neurographs is devoted entirely to the subject of Huntington's chorea, and constitutes a memorial, or "Festschrift," in honor of Dr. George Huntington, after whom this form of chorea is named. Besides a biographical sketch of Dr. Huntington the volume contains a reproduction of his original article and a thorough study of all the historical data in relation to the disease and the families first described, by Osler, Jelliffe, and others, as well as valuable clinical articles by Diefendorf and Tilney in this country, and Strümpell, Lannois and Paviol from abroad. It closes with what is probably the most elaborate bibliography of the disease ever published.

Though Huntington has written but little his original article is a model of its kind. Dr. Osler says of it: "In the whole range of descriptive nosology there is not to my knowledge an instance in which a disease has been so accurately and fully delineated in so few words." Fortunately, Dr. Huntington is still living to find pleasure in this recognition of his pioneer work.

The book constitutes a valuable contribution to the subject of Huntington's chorea and in addition is a most graceful and well-deserved tribute to a man who has helped in a worthy way to advance medicine in America.

A PHENOMENAL AORTIC ANEURYSM

W. Gilman Thompson, of New York, describes an aneurysm of the abdominal aorta of unusual size, causing displacement of the kidneys and erosion of five dorsal vertebræ.—Medical Record.



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AUGUST 15, 1908

FEES DIVERTED AND DIVIDED

Whenever medical men gather around the festive board or in conference, and even in their social meetings, a discussion of the fee subject is almost inevitable, and not infrequently disquieting rumors are sent out, which, if true, cast great discredit on some members of the profession.

The old question of the division of fees will probably remain unanswered for some time if the strife and strength on the part of the individual members of the profession to gain a foothold and to secure recognition and representation prompt them to all sorts of illegal and discriminating financial follies.

At one of the county societies, when the question of fee division came up, it was claimed that men in the larger cities were still dividing their fees with the country practitioners, and that the division was from one-third to one-half and sometimes two-thirds of the fee involved; that in one of the Twin Cities it is much worse than in the other. We leave our readers to inform themselves as to which of the cities bears the worst reflection. There is no doubt that there is much truth in this accusation, for physicians are sometimes careless about their checks, and many instances

are recorded where checks have been signed, given to the visiting medical man for his share of the "profits." One instance is recorded where a physician referred his patients to a specialist. He collects his fee in advance, charging a good round sum, sends his patient to the specialist, and then neglects to pay the fee where it rightfully belongs. This is simply a form of embezzlement. But because doctors are looked upon as "easy marks," if one member of the profession is unscrupulous, he does not hesitate to take advantage of his brother who is honest and honorable in his dealings with his patients.

The division of fees and the diversion of fees should be a thing of the past.

If medical men were more business-like in their methods, and were more honorable in their conduct towards each other, there would be no necessity for such unfortunate practices.

THE JOURNAL-LANCET is willing to entertain a moderate discussion on this subject, and will very gladly receive communications, which may be considered confidential, as to the practices of physicians either in the country or in the cities.

WATER SUPPLY FOR TOWNS AND CITIES

The thrilling experience which Mankato is undergoing is a sufficient text for everyone who is interested in a supply of safe and pure water for drinking purposes.

More than four hundred cases of typhoid fever have already resulted from the recent flood which spread over Mankato and the surrounding country. The mayor, Dr. J. W. Andrews, has appointed a committee of business men to investigate the situation and, if possible, to fix the blame for the epidemic. If this can be carried out in a scientific manner and the fault exposed without fear or favor it may awaken many communities to the necessity of immediate attention to a problem that may be the means of preventing the repetition of an epidemic directly or indirectly due to pollution of waters.

Unless some heroic measures are adopted the commonwealth authorities will continue to place obstacles in the way of improving the methods of providing pure water for domestic purposes. The pollution of rivers and lakes is so general and the indifference of the public is so great that only the loss of life and the expense that accompanies an epidemic will arouse the officials of any locality to activity.

The one enormous problem which will soon

confront the residents along the Mississippi is appalling. It means that not only the Twin Cities but many smaller cities situated upon this great stream must some day realize what water pollution really signifies.

The argument that is so generally advanced is the lack of means and money to rectify the evil. The expenditure of a moderate sum for small cities and a large sum for large cities must be faced eventually. It is true that many people are immune to the ill effects of impure water, but the majority are in constant danger, yet they fail to appreciate the situation. The suggestion that a number of artesian wells would provide a sufficient quantity of good, wholesome water is not received with favor by the city fathers of Minneapolis. Where the experiment has been tried it has not been found wanting. It is comparatively inexpensive and reasonably safe and sure, just as safe as piping long distances from a lake that is not properly policed. Lakes and reservoirs would perhaps insure an adequate supply, but the expense of installation and protection must be considered. To command a situation of this kind means the purchase of the surrounding country. Unless immediate action is taken there will be no pure lake supply, as the country is rapidly settling up, and the distances will be too great unless expense is not to be taken into account. In the meantime the streams which now do service are being constantly used as dumping-grounds. Filter-beds are expensive and unreliable, and no sure means of purification have been devised.

No better advertisement than a pure water supply could be promulgated to attract visitors and residents than the assurance that the water we drink is free from taint of impurities. Funds must be provided in spite of all other obstacles. Why are physicians so inactive when danger is threatening? Are we too zealous when it comes to protecting ourselves and too lax when the public is concerned?

St. Paul gets its water supply from Lake Phalen, then it makes its shores a picnic ground! Must Minneapolis continue to buy its water by the bottle and allow wells and streams to become infected while it waits for threatening lessons to impress themselves upon the public?

Some day some one will rise in wrath and institute legal proceedings to protect the water supply of many cities. Will not some one start the conflict and determine whether the State Board of Health has jurisdiction? So far every one is afraid to precipitate the fight to ascertain

whether the Mississippi is to remain the dumping-stream or the drinking-fount of thousands.

THE TRAINING OF A NURSE

The American Hospital Association will meet at Toronto, Canada, September 29th to October 2d. The preliminary program offers papers that cover the field of nursing, training-schools, and hospital management in all of its departments. In all probability the pendulum regulating the training of the nurse will be adjusted to meet the advanced views of physicians and superintendents of training-schools.

When the various states adopted the three-year course it was done with the expectation that a uniformity in training could be established. Has this been accomplished and are the results satisfactory?

Doubtless much has been accomplished in many cities to stimulate the profession of nursing, but whether the stand taken can be maintained is a question for further discussion. In the large cities where great hospitals are powerful factors in the medical world, the "graduate nurse" is a permanent feature, but when one considers the needs of all classes of people there must be a departure from a fixed plane. A percentage of the population in the cities can afford the luxury of a thoroughly qualified nurse. A larger percentage, however, feel the financial strain that inevitably follows a prolonged illness. A still greater number of sick are wholly unable to bear the burden of an expensive illness and must care for their own by their unaided efforts. The results under certain conditions are discouraging, and a sentiment that is largely entertained demands a nurse who is willing to adapt herself to her surroundings.

To meet these varying requirements the training-schools throughout the country may be obliged to modify their entrance and training qualifications. There is a possibility that many schools will offer a term of training that will provide for all contingencies.

At a meeting of the Ramsey County Medical Society a few months ago, Dr. Haldor Snévé outlined a plan to create what is known as a "home nurse." One year in a hospital with work and study in the fundamental departments would equip the applicant with sufficient knowledge to go out among the poorer classes and care for the sick. These nurses would be classified and could take up the work at a moderate wage and thus relieve the strain that is often a needless burden.

A second class with two years' training would provide the people with nurses who would be amply trained for private work of a special or general kind.

Many nurses like to specialize, for, like physicians, they are interested in certain branches of their profession, and they should be given special opportunities. When in practice, they drift into special lines, surgical, medical, or obstetrical.

The third class, those who take the full course of three years, should be trained not only for all fields of nursing, but for institutional work. This means executive duties, management, housekeeping, dietetics, and teaching.

The third year in large hospitals should be given over to post-graduate methods entirely.

The training of hospital superintendents or of superintendents of training-schools is one of great urgency. The number of small hospitals that are springing up all over the country show the necessity of developing the executive side of hospital management. The smaller hospitals are usually managed by a nurse who has had the usual amount and character of training; often successfully, if too much is not demanded, and often unsuccessfully because the superintendent is not broad enough to see and meet the requirements.

The preliminary and preparatory entrance requirements are frequently overlooked because the material offered is not adequate for their fulfillment; hence we have a large number of poor nurses who are fitted only for the domestic classes, and they demand and receive wages far beyond the value of the service they render.

Conditions must be changed, and to meet the demands of the public better opportunities for instruction and training must be offered to attract intelligent, conscientious, and willing workers.

THE STATE FAIR

The loyalty of the citizens of Minnesota has made our State Fair the greatest annual fair in America, and physicians should not forget how much they may do to enable the State to hold this high first place among fairs.

This year the Fair will be greater than ever. The exhibits of all that the farm produces and all that it uses in the shape of machinery, etc., will surpass all former exhibits; and the amusement features will be better than ever, and they will be of a higher grade. With the reduced railroad fares, the attendance should be the largest in the history of the Fair.

The Twin Cities will give visitors a hearty welcome.

Remember the dates—August 31st to September 5th.

REPORTS OF SOCIETIES

SOUTH DAKOTA STATE MEDICAL ASSOCIATION ANNUAL MEETING AT YANKTON, SEPTEMBER 2-4, 1908

PROGRAM

Wednesday, September 2d

4 P. M. General session.

Address of welcome, H. K. Warren, M. A., LL.D., President of Yankton College.

Response, Dr. R. C. Warne, Mitchell.

"Practice of Medicine as a Specialty," C. S. O'Toole, Vienna. Discussion opened by R. E. Woodworth, Sioux Falls; C. M. Keeling, Springfield.

"Mucous Colitis," T. J. Billion, Sioux Falls. Discussion opened by E. W. Jones, Mt. Vernon; C. O. Olson, Groton.

"Irregular Ethics, Grafts, and Frauds in the Profession," J. A. Hohf, Tripp.

First session of the House of Delegates, 7 P. M.

Thursday, September 3d—Morning Session

9:30 A. M. General session.

President's address, L. C. Mead, Yankton.

"Gastric and Duodenal Ulcers," E. T. Ramsey, Clark.

"Gastric Ulcer," F. E. Walker, Hot Springs. Discussion opened by F. M. Crain, Reelfoot; S. A. Brown, Sioux Falls.

"Angiomata of the Face and Sinuses," E. F. Reamer, Mitchell. Discussion opened by D. W. Rudgers, Yankton.

"A Plea for Redistricting According to County Lines," R. C. Faust, Salem. Discussion opened by C. B. Mallory, Aberdeen; F. W. Freyberg, Mitchell.

"Remarks on Therapeutics," H. J. Koobs, Scotland. Discussion opened by I. N. Kjerland, Webster; H. W. Sherwood, Doland.

Afternoon Session

2 P. M. General session.

"The Surgical Aspects of the Stomach and Duodenum," A. J. Ochsner, Chicago. Discussion opened by H. J. Rock, Aberdeen; J. E. Summers, Omaha.

"What Can Our Association Accomplish in Business, Educational, Moral and Social Matters?" R. C. Warne, Mitchell. Discussion opened by Wm. Edwards, Bowdle; J. O. Duguid, Springfield.

"Some Observations Upon an Apparently New Disease," W. E. Clark, Frederick.

"Lachrymal Apparatus," L. G. Hill, Watertown. Discussion opened by J. G. Parsons, Sioux Falls.

"Heredity," R. L. Murdy, Aberdeen. Discussion opened by F. A. Spafford, Flandreau; E. Klavness, Sioux Falls.

"Should the General Practitioner Know Anything About Refraction?" E. B. Taylor, Huron. Discussion opened by F. E. Ashcroft, Deadwood; E. C. Miller, Brookings.

"Fracture of the Femoral Neck and Its Treatment," A. S. Rider, Flandreau. Discussion opened by Bert Menser, Bridgewater; Percy Peabody, Webster.

"A Plea for Turbinotomy," H. H. Frudenberg, Madi-

son. Discussion opened by R. D. Alway, Aberdeen.

"A Talk to the Doctors," J. N. McCormack, Bowling Green, Ky.

Friday, September 4th—Morning Session

9:30 A. M. General session.

"Modern Methods in the Radical Cure of Hernia," (illustrated), E. Wylls Andrews, Chicago. Discussion opened by B. A. Bobb, Mitchell; Karsten Zeitlitz, Sioux Falls.

"Lacerations of the Parturient Canal: Their Prevention and Immediate Treatment," David L. Rundlett, Sioux Falls. Discussion opened by W. E. Moore, Tyn-dall; E. M. Doyle, Yankton.

"Diphtheria," E. J. Clemons, Aberdeen. Discussion opened by H. M. Finnerud, Watertown; Port McWhor-ter, Miller.

"Laboratory Aids in Diagnosis," H. M. Freeberg, Watertown. Discussion opened by J. J. Deertz, North-ville; G. W. Potter, Redfield.

"Alcohol as a Medicine," C. V. Templeton, Woon-socket. Discussion opened by D. E. Arnold, Aberdeen; Fred Treon, Chamberlain.

"The Physician's Duty to Himself," J. L. Stewart, Irene. Discussion opened by J. B. Vaughn, Castle-wood; J. L. Foxton, Huron.

"Eye, Ear, Nose, and Throat Conditions in Chil-dren," E. D. Putnam, Sioux Falls. Discussion opened by Frank Miller, Aberdeen; A. A. Sorenson, Aberdeen.

"To Consider the Organization of a State Association for the Prevention of the Spreading of Tuberculosis," F. M. Crain, Redfield.

Open session of the House of Delegates.

Afternoon Session

4 P. M. General session.

Clinic at State Hospital for the Insane, D. R. Brower.

HOUSE OF DELEGATES

First District—D. E. Arnold, Aberdeen.

Second District—R. F. Campbell, Watertown.

Third District—Not elected upon going to press.

Fourth District—J. L. Foxton, Huron.

Fifth District—H. B. Noble, Howard.

Sixth District—H. B. Scofield, Parkston.

Seventh District—H. W. Subera, Sioux Falls.

Eighth District—James Roane, Yankton.

Ninth District—F. E. Walker, Hot Springs.

ENTERTAINMENT

September 2d, 8:30 P. M., there will be a lecture by Dr. J. N. McCormack, of Bowling Green, Ky.

September 3d, 8:30 P. M., there will be a theater party at the Opera House.

September 4th, in the afternoon, the visiting ladies will be given an auto ride with a picnic on the Jim river and an excursion down the river in motor boats.

On the afternoon of September 4th there will be an excursion for the physicians to the State Hospital for the Insane, followed by a banquet in the evening.

THE SOUTHERN MINNESOTA ASSOCI- ATION

The seventeenth annual meeting of the Asso-ciation was held at Owatonna on August 6th with a large attendance.

Papers were read as follows:

President's address, "Chronic Infectious Met-

ritis," Dr. C. O. Cooley, Madelia; "Shock and Its Treatment," by Dr. C. S. Bigelow, Dodge Center; "Some Practical Points in Physical Ex-amination," by Dr. H. Z. Giffin, Rochester; "Actinomycosis, with a Report of a Case of the Cervicofacial Type," by J. H. Adair, Owatonna; "A Talk on the Parathyroid and Ductless Glands," Dr. C. H. Mayo, Rochester; "Indica-tions for Herniotomy in Children," by Dr. E. S. Judd, Rochester.

The discussions were full and very instructive.

The following were elected officers for the coming year: President, Dr. O. F. Way, Clair-mont; vice-president, Dr. H. F. McGaughey, Winona; secretary-treasurer, Dr. W. T. Adams, Elgin.

The Association will meet at Winona next year.

CAMP RELEASE DISTRICT SOCIETY

The Society met at Bird Island on July 23d.

Papers were read as follows:

"Chronic Ulcer of the Duodenum, with Report of Cases," by Dr. G. H. Mesker, Olivia; "A Few Hints," by Dr. C. E. Rogers, Montevideo.

Dr. F. L. Puffer, of Bird Island, made appli-cation for membership.

The next meeting will be held October 22d at Hanley Falls.

R. D. ZIMBECK, M. D., Secretary.

CLAY-BECKER COUNTY SOCIETY

The Society met at Detroit on July 27th.

Papers were read as follows:

"Infant-Feeding," by Dr. W. J. Awty, Moor-head; "Diarrhea in Infants," by Dr. Th. S. Egge, Moorhead.

A banquet was given at Hotel Minnesota, after which the Society held its business meeting at the residence of Dr. Weeks.

E. R. BARTON, M. D., Secretary.

NEWS ITEMS

Dr. Evald Bergroth, of Duluth, has moved to Fitchburg, Mass.

Dr. C. C. Pratt, of Minneapolis, has moved to Grand Forks, N. D.

Dr. Earl Current, of football fame, has lo-cated at Moxbridge, S. D.

Dr. R. D. Campbell, of Grand Forks, N. D., has returned from his European trip.

Dr. M. P. Irby has entered into partnership with Dr. F. J. Roberts, of Cando, N. D.

Drs. Dott and Ramsey, of Salem, S. D., have dissolved partnership, Dr. Dott taking the practice.

Dr. C. A. Durkee, a recent graduate, has located in Moorton, a new town of Richland county, N. D.

Dr. A. G. Stoddard, of Fairfax, who recently gave up practice in Minnesota, is now located at Spanish Fork, Utah.

Dr. A. M. Fisher, of Underwood, N. D., is doing post-graduate work in Chicago, mainly under Dr. Murphy.

Dr. A. N. Ganz, who has been doing post-graduate work in Chicago for the past year, has located at Minot, N. D.

Dr. P. H. Muus, of Kensington, has sold his practice to Dr. A. J. Ostrander. Dr. Ostrander is a graduate of Hamline, class '08.

Dr. C. W. Wilkowske, of Faribault, is studying in Europe. Dr. H. R. Smith, of Minneapolis, has charge of his practice during his absence.

The Northwestern Life Insurance Company of Minneapolis has adopted a uniform fee of \$5.00 for examinations made for the company.

Dr. W. A. Chamberlin, of Waseca, is doing post-graduate work in the clinics of Prof. Cabot of the Massachusetts General Hospital, Boston.

Dr. H. F. Kilgore, of Luverne, has sold his practice to Dr. E. O. Thorsen, of Colton, S. D., and will retire from practice until he regains his health.

Dr. Mary E. Whetstone, of Minneapolis, is at work upon an elaborate report of child labor in factories, which she is making for the government.

Dr. M. A. Walker, of Dillon, Mont., will be Montana's delegate to the International Congress on Tuberculosis, to be held in Washington in September.

The Heidelberg Medical Institute of St. Paul has been granted a new trial in the case wherein a judgment of \$3,500 was obtained against it by the guardian of Frank Frei, deceased.

The contract has been let for the foundation of the handsome hospital building to be erected at Twenty-third avenue So. and Sixth street,

Minneapolis, by the Fairview Hospital Association. The building will cost \$150,000.

The handsome and commodious new building being erected by the Oconomowoc Health Resort, at Oconomowoc, Wis., to take the place of the one destroyed by fire, will soon be completed, and the Resort will be opened early in October.

The medical inspection in the Horace Mann school of Minneapolis showed only 115 pupils out of a total of 700 to be in perfect health, and at the Franklin school, with about the same attendance, only 45 pupils were found to be in perfect health.

Dr. Alexander Barclay, of Aitkin, has purchased the hospital of Dr. R. J. Sewall at Cloquet. Dr. Barclay is a graduate of the State University, class '07. Dr. Sewall goes to Deer Wood as physician and surgeon of the mining companies of that place.

Dr. U. G. Williams will be a candidate for mayor in Minneapolis. Drs. C. D. Whipple and Gilbert Seashore will be candidates for the office of coroner. The fees for the latter office are small, but the post-mortem work makes the office of especial value to physicians.

A Duluth dairyman entertained the St. Louis County Medical Society last week, serving a lunch in his dairy barn between two rows of cows. This was done to show the medical men of Duluth how a model dairy is run, and probably to give them one drink of pure, fresh milk.

Dr. W. C. Chambers, whose removal from Ceylon to Blue Earth was recently announced in these columns, writes us that he is doing general practice and is not connected with the hospital at Blue Earth, although occasionally being called upon to assist Dr. Schmitt, who has charge of the hospital.

The courts of North Dakota are making it very clear that doctors in that state may not sell, without a license, any intoxicant, either as a beverage or as medicine, but they may administer an intoxicant without violating the law. But, the judge says in a recent case, the law does not permit a doctor to take pay for such administration.

The new committee to continue the work of medical inspection in the public schools of Minneapolis was appointed last month by Dr. F. A. Knights, president of the Hennepin County Medical Society, as follows: Dr. W. A. Jones, chairman; Drs. J. F. Corbett, J. A. Crosby, Herman Bouman, S. P. Rees, C. A. Donaldson, J. P. Bar-

ber, T. F. Quinby, E. C. Hare, O. K. Richardson and Ida A. MacKeen.

Dr. Henry A. Beaudoux, of Fargo, N. D., is to take up the practice of the late Dr. J. E. Schadle, of St. Paul. Dr. Beaudoux is a specialist in eye, ear, nose, and throat work, and has stood very high in the profession of North Dakota, and is now president of the State Medical Association. He is a graduate of the University of Minnesota, class of '94, and will be welcomed in the Twin Cities by many acquaintances and friends.

FOR SALE

Static machine with all accessories, in first-class condition. A genuine bargain. Reason for selling, have moved west. For particulars, address M. S., care of this office.

OFFICE FOR RENT

I will rent, at a reasonable figure, my offices for any hours in the day except from 2 to 4. Call at Suite 804, Pillsbury Bldg., Minneapolis.

FOR SALE

Doctor's office centrally located in Minneapolis—for rent. Furniture, static x-ray machine, etc., etc., for sale, including good-will of business. Sickness reason for leaving city. Address W. M., this office.

FOR SALE OR TRADE

\$300 static and x-ray machine. Good as new. Will trade for good single driving horse. Address E. S., care of this office.

PHYSICIAN WANTED

There is a good location for a doctor and a druggist in a well-populated district within 25 miles of Minneapolis. Practice is among both country and city people. The doctor in the place (a homeopath) has more work than he can attend to. Address C. M., care of this office.

FOR SALE

Drug-store and practice in new and growing town of 300 in Northern Minnesota. No competition within 20 miles. Good country. Income \$250 a month. Must sell at once. Price, \$500. Drug stock alone worth more. Address S. B., care of this office.

TO THE PROFESSION—X-RAY LABORATORY

I have a well equipped x-ray laboratory, rooms 214-218 American National Bank Building, corner Fifth and Cedar streets, and am prepared to do your radiographic or Roentgen-ray therapeutic work.—W. S. Fullerton, M. D., St. Paul, Minn.

PHYSICIANS' ATTENTION.—Drug-stores on easy payments, etc. Drug-store positions, United States or Canada. F. V. Kniest, Omaha, Nebr.

DEATHS REPORTED TO THE STATE BOARD OF HEALTH OF MINNESOTA FOR THE MONTH OF MAY 1908,

REPORTED FROM STATE INSTITUTIONS FOR MONTH OF MAY, 1908

STATE INSTITUTIONS.		Total Deaths	Tuberculosis of Lungs	Other Forms of Tuberculosis	Pneumonia	Bronchitis	Diphtheria	Scarlet Fever	Measles	Smallpox	Whooping Cough	Cerebrospinal Meningitis	Typhoid Fever	Diarrheal Dis- eases of Children	Puerperal Septicemia	Cancer
Fergus Falls, Hospital for Insane.....	10	2	1	1	1											
Rochester, Hospital for Insane.....	7	1	1													1
St. Peter, Hospital for Insane.....	1	1														
Anoka, Asylum.....	1	1														
Hastings, Asylum.....	0	1														
Faribault, School for Deaf.....	1	1														
Faribault, School for Blind.....	1	1			1											
Faribault, School for Feeble Minded.....	3	1			1											
Owatonna, School for Dependents.....	0	0														
Stillwater, State Prison.....	0	0														
St. Cloud, State Reformatory.....	0	0														
Red Wing, State Training School.....	0	0														
Minneapolis, Soldiers' Home.....	5	1														2
Totals.....	35	3	2	3	1			1								3

REPORTED FROM 72 CITIES HAVING A POPULATION OF 1,000 OR UPWARDS
FOR THE MONTH OF MAY, 1908

CITIES	Population of U. S. Census of 1900	Population of State Census of 1905	Total Deaths	Tuberculosis of Lungs	Other Forms of Tuberculosis	Pneumonia	Bronchitis	Diphtheria	Scarlet Fever	Measles	Smallpox	Whooping Cough	Cerebrospinal Meningitis	Typhoid Fever	Diarrheal Dis- eases of Child- ren	Puerperal Septicemia	Cancer
Albert Lea.....	4,500	5,657	6	1	1	1	1										2
Anoka.....	3,769	4,053	7	1													2
Austin.....	5,474	6,489	11	10	1	2											1
Barnesville.....	1,326	1,566	3														
Bemidji.....	2,183	3,800	3	1													
Blue Earth.....	2,900	2,364	3														
Brainerd.....	7,524	8,1	15		1	1								2	1		
Chaska.....	2,165	2,085	2			1											
Chatfield.....	1,426	1,300	1														
Cloquet.....	3,074	6,117	7					1									
Crookston.....	5,359	6,794	14	1		2											1
Detroit.....	2,060	2,149	4													1	
Duluth.....	52,968	64,942	61	6	1	6	1	1						1	4		4
E. Grand Forks.....	2,077	2,481	2			1											
Ely.....	3,712	4,045	5		1												
Eveleth.....	2,752	5,332	4														
Faribault.....	7,868	8,279	8	2													1
Fairmont.....	3,440	2,955	2														
Fergus Falls.....	6,072	6,692	8	1	1							1					1
Granite Falls.....	1,214	1,340	*														
Hastings.....	3,811	3,810	4					2									
Hutchinson.....	2,495	2,489	2	1													
Jordan.....	1,270	1,311	4			1	1										1
Lake City.....	2,744	2,877	2														1
Litchfield.....	2,280	2,415	5														1
Little Falls.....	5,774	5,856	3			1											1
Luverne.....	2,223	2,272	4			2											
Le Sueur.....	1,937	1,842	1														
Madison.....	1,336	1,604	4	1													1
Mankato.....	10,559	10,996	11	1		1											1
Marshall.....	2,088	2,243	0														
Melrose.....	1,768	2,151	1														
Minneapolis.....	202,718	261,974	239	26	8	29	3	8	2	1			2	1	5	2	11
Montgomery.....	979	1,281	1														
Montevideo.....	2,146	2,595	1														
Moorhead.....	3,730	4,794	2	1													1
Morris.....	1,934	2,003	1	1													
New Prague.....	1,228	1,419	3														1
New Ulm.....	5,403	5,720	1														1
Northfield.....	3,210	3,438	3			1											1
Ortonville.....	1,247	1,612	0														
Owatonna.....	5,561	5,651	10	2			1										1
Pipestone.....	2,536	2,885	1														
Red Lake Falls.....	1,885	1,797	0														
Red Wing.....	7,525	8,149	7	1				1									
Redwood Falls.....	1,661	1,806	3	1						1							1
Renville.....	1,075	1,229	0														
Rochester.....	6,843	7,253	11	1													2
Rushford.....	1,100	1,133	1														
St. Charles.....	1,304	1,238	4														1
St. Cloud.....	8,663	9,422	6	1	1												2
St. James.....	2,607	2,320	2														
St. Paul.....	163,632	197,323	154	11	4	14	1	5	1			1	1	1	1	1	8
St. Peter.....	4,302	4,514	4	1													1
Sauk Centre.....	2,220	2,463	1														
Shakopee.....	2,046	2,069	1														
Sleepy Eye.....	2,046	2,312	1														
So. St. Paul.....	2,322	3,458	7					1									
Stillwater.....	12,318	12,435	9			2		1									
Thief River Falls.....	1,819	3,502	*														
Tower.....	1,366	1,340	2														1
Tracy.....	1,911	2,015	4			1											
Virginia.....	2,962	6,056	12			4				1							
Wabasha.....	2,528	2,619	5														
Warren.....	1,276	1,640	1														1
Waseca.....	3,103	2,838	3					1									
Waterville.....	1,260	1,383	0														
West St. Paul.....	1,830	2,100	*														
Willmar.....	3,409	4,040	1														
Windom.....	1,944	1,884	4	1		1											
Winona.....	19,714	20,334	22	4		3		1	1								4
Worthington.....	2,386	2,276	2														

THE JOURNAL OF THE MINNESOTA STATE MEDICAL
REPORTED FROM 65 VILLAGES HAVING A POPULATION OF 1,000 OR UPWARDS
FOR THE MONTH OF MAY, 1908

VILLAGES	Population of U. S. Census of 1900	Population of State Census of 1905	Total Deaths	Tuberculosis of Lungs	Other Forms of Tuberculosis	Pneumonia	Bronchitis	Diphtheria	Scarlet Fever	Measles	Smallpox	Whooping Cough	Cerebrospinal Meningitis	Typhoid Fever	Diarrheal Dis- eases of Children	Puerperal Septicemia	Cancer
Ada.....	1,253	1,515	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Adrian.....	1,258	1,184	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Aitkin.....	1,719	1,896	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Akeley.....	..	1,636	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Alexandria.....	2,681	3,051	4	1	..	..	..	..	1	..	..	..	..	..	..	..	..
Appleton.....	1,184	1,321	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Belle Plaine.....	1,121	1,301	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Benson.....	1,525	1,766	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Breckenridge.....	1,282	1,850	3	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Buffalo.....	1,040	1,124	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Caledonia.....	1,175	1,405	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Canby.....	1,100	1,505	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cannon Falls.....	1,239	1,460	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..
Cass Lake.....	546	1,062	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..
Chisholm.....	..	4,231	12	1	..	..	..	..	..	..	..	..	..	..	..	..	2
Clason.....	962	1,056	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Delano.....	967	1,023	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Fosston.....	864	1,000	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Frazee.....	1,000	1,146	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Glencoe.....	1,780	1,805	2	..	..	1	..	..	..	..	..	..	..	..	..	..	..
Glenwood.....	1,116	1,718	3	..	..	1	..	..	..	..	..	..	..	..	..	..	..
Graceville.....	856	1,032	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Grand Rapids.....	1,428	2,055	11	..	..	1	..	..	..	..	..	..	..	..	..	..	..
Hallock.....	805	1,014	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Hibbing.....	2,481	6,566	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Jackson.....	1,756	1,776	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Janesville.....	1,254	1,205	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Kasson.....	1,112	1,049	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Kenyon.....	1,202	1,252	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Lake Crystal.....	1,215	1,231	3	..	1	1	..	..	..	..	..	..	..	..	..	..	..
Lanesboro.....	1,102	1,041	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Long Prairie.....	1,385	1,256	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Madelia.....	1,272	1,290	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Milaca.....	1,204	1,319	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Mountain Lake.....	959	1,063	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
North Mankato.....	939	1,129	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
North St. Paul.....	1,110	1,400	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Olivia.....	970	1,019	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Osakis.....	917	1,056	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Park Rapids.....	1,313	1,719	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Pelican Rapids.....	1,033	1,095	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Perham.....	1,182	1,366	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Pine City.....	993	1,092	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Plainview.....	1,038	1,140	4	1	..	..	..	..	..	..	..	..	..	..	..	..	2
Preston.....	1,278	1,320	2	..	..	1	..	..	..	..	..	..	..	..	..	..	..
Princeton.....	1,319	1,704	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Rush City.....	987	1,041	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Rushford.....	1,062	1,040	0	..	..	..	..	1	..	..	..	..	..	..	..	..	..
St. Louis Park.....	1,325	1,491	0	..	..	..	..	..	..	..	..	..	..	..	1	..	..
Sandstone.....	1,189	1,589	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Sauk Rapids.....	1,391	1,552	4	..	..	..	..	..	..	..	1	..	..	..	..	..	..
Scanlon.....	..	1,122	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
South Stillwater.....	1,422	1,572	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Springfield.....	1,511	1,546	2	..	..	..	..	..	..	1	..	..	..	..	..	..	..
Spring Valley.....	1,770	1,573	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Staples.....	1,504	2,163	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Two Harbors.....	3,278	4,402	4	2	..	..	..	..	..	..	..	..	..	..	..	..	..
Wadena.....	1,520	1,868	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Wells.....	2,017	1,814	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
West Minneapolis.....	2,250	2,530	5	1	..	1	..	..	..	..	..	..	..	..	..	..	1
Wheaton.....	1,132	1,346	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
White Bear Lake.....	1,238	1,724	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Winnebago City.....	1,816	1,553	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Winthrop.....	813	1,031	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Zumbrota.....	1,119	1,129	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..
State Institutions.....	..	..	35	3	3	3	..	..	1	..	..	..	..	2	..	..	3
Other parts of State.....	1,012,328	1,085,886	612	60	6	43	7	19	2	4	1	7	1	5	10	4	34
Total for State.....	1,751,395	1,979,658	1479	135	26	126	16	42	7	8	2	9	4	13	23	8	99

Still births and premature births, 101 (not included in above totals).

*No report received Health officer not doing his duty

THE JOURNAL OF THE MINNESOTA STATE MEDICAL ASSOCIATION AND THE NORTHWESTERN LANCET

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MILK—CLEAN OR UNCLEAN?*

By M. H. REYNOLDS, M. D., D. V. M.

Professor of Veterinary Medicine, University of Minnesota.

ST. ANTHONY PARK, ST. PAUL

The quality and wholesomeness of milk is a matter of such fundamental importance that surely no excuse is needed for presenting it here. The enormous extent to which it is used as a food for children and even adults; the extent to which it is used as food for growing calves and other live stock; the ease of infection with tuberculosis and other diseases; the fact that bacteria multiply rapidly in it; the comparative ease of producing wholesome milk, and the very grave dangers from bad milk—all emphasize the vast importance of the subject. Those who are not working with these problems do not realize the importance of milk and its products as food materials; few of us realize actually and clearly the great importance of having it clean and normal; and few realize how very dirty and unsafe, clean-looking milk may be. Some figures may serve to bring this home.

As I write there is before me a summary of literature on infection with tuberculosis of people through milk, by ten observers reporting twenty-eight cases of tuberculosis in the human being where the history and the other evidences were so clear that no reasonable doubt could exist that the infection came from the bovine through milk. All cases where there was a reasonable possibility or probability of other source of infection were excluded, and of course the latter would naturally include a very much larger number.

The fact that tuberculosis of adults is decreas-

ing in many cases, whereas tuberculosis among young children in those same places is either not decreasing at all or is even increasing, is quite suggestive as to the possible source of infection.

If there are those who doubt that there is an important relation between human and bovine tuberculosis, I would call attention to authentic records. Eight years ago Dr. Repp collected a large number of records. He examined them critically, sifted out doubtful cases, and put this material into convenient form for reference. If this list were brought down to date, it would be too long to use here—and could not be more suggestive.

Please bear in mind that but a small proportion of such cases are even reported by medical men so they may be safely used for scientific records.

In selecting from this mass of evidence I have taken only cases where infection presumably occurred by natural methods, excluding records of artificial inoculations, although to the medical men and the scientist these are even more important because positive. I have also excluded the evidence relating to infection by meat because the milk is more important.

The full records of the following are available. I quote:

ANIMAL TUBERCULOSIS

"Bang reports autopsy on thirty-four milk-fed calves, twenty-four (70.6 per cent) of which showed lesions of tuberculosis evidently produced by the ingestion of milk containing tubercle bacilli. Since then this author has made numerous similar observations.

"Law fed three calves of healthy parents on the milk of three tuberculous cows with apparently sound udders

*Read before the Washington County Medical Society, March 27, 1908.

with the result of producing tuberculosis in all three calves—100 per cent.

"Ernest fed twenty-one healthy calves on milk of tuberculous cows with healthy udders and eight (38 per cent) of them became tuberculous.

"Ernest fed forty-eight rabbits from one to three months on the milk of healthy udders, and two (4.1 per cent) were infected with tuberculosis.

"Hills and Rich record the observation made by one of them that five swine born of apparently healthy parents and fed on skim-milk from a creamery partly supplied by tuberculous cows, were found tuberculous on autopsy. Also that many of the pigs fed on the milk of a herd of ninety-one cattle, seventy-eight of which were tuberculous, were found tuberculous on post-mortem examination.

"Russell fed two pigs, beginning at six weeks of age, from August 23 to November 10, on separator slime received from the college creamery. (The cattle were presumably not tuberculous). None of the pigs became tuberculous.

"Bang says: 'In Denmark milk is often given to young or to sick horses, and in those parts of the country where this is a frequent custom, tuberculosis is not rare in the horse.'

"McFadyean says: 'In a considerable proportion of cases there was a distinct history of the animal's having been fed with tuberculous milk. Now, when one reflects that certainly not one horse in several hundreds is at any period of its life fed on cow's milk the frequency with which tuberculosis has been met with in horses that have been fed so becomes very striking.'

HUMAN TUBERCULOSIS

"Oliver reports that in a young ladies' boarding-school five girls, children of healthy parents, died of tuberculosis of the intestines. The cow which had for years supplied the school with milk was found to have generalized tuberculosis, including the udder.

"Two daughters of a Scotch family of good health brought up on milk of tuberculous cows died of tuberculosis. Two sons in the same family who did not use the milk remained healthy.

"Stang reports the case of a five-year old boy of sound parentage and ancestry who died of tuberculosis. The cow whose milk this boy used was found badly tuberculous.

"Demme reports the cases of four infants in the Children's Hospital at Berne, offspring of sound parents, that died of intestinal and mesenteric tuberculosis. He was able to exclude all other sources of infection and to decide that they had been infected by the ingestion of the milk of tuberculous cows.

"Hills mentions the case of a child twenty-one months old, which drank the milk of a highly tuberculous cow for one week while on a visit to his uncle, and three months later this child died of intestinal tuberculosis. Other sources of infection could be excluded. A second child brought up on sterilized milk is still healthy.

"Hills also reports the death of a boy four years old at Yonkers, N. Y., from tubercular meningitis. The infection was traced to the milk of two cows of whose milk this boy had drunk and which proved on autopsy to be tuberculous.

"Ernest reports the death of three children of one family from tuberculosis. These children had used the

milk of a cow which later died of advanced tuberculosis, including the udder.

"Stalker and Niles report that five persons between twenty and thirty years of age of healthy ancestry died of tuberculosis within a period of two years. On the farm where these deaths occurred they found seventeen cattle suffering from tuberculosis and other cattle had previously died of this disease.

"Leonhardt reports the death from tuberculosis of the meninges, intestines, and mesentery of two children fed on milk of a tuberculous cow.

"Sontag reports the case of a six-months-old child of healthy parents which died of tuberculosis and which had been fed on the milk of a tuberculous cow.

"Hermisdorf has reported the case of a child dead of intestinal tuberculosis which had been fed on the milk of a tuberculous cow.

"Rich reports that a young man of healthy parents who died of tuberculosis had used plentifully of the milk of a herd of seventy-four cattle, sixty-five of which were tuberculous, some of them markedly so. Another young man died of tuberculosis. Two months later Rich destroyed eighty cattle out of a herd of the family, that is, about ninety per cent of the entire herd. Also another case of a young woman who died of tuberculosis, and a month later the cow whose milk she had used, died of advanced tuberculosis.

"Thorne reports that twenty-two physicians out of 339 practicing in Ohio replied in the affirmative to the question, 'Have you been able to trace any cases of tubercular disease to the milk of unhealthy cows?' and that thirty-three replied affirmatively to the question, 'Have you had reason to suspect the origin of tubercular disease in older children or adults to be in the milk or meat-supply?'

This series of experiments and observations has been selected from that literature with the greatest care. Any reports which appeared not well authenticated or of a doubtful nature have been excluded. Besides this mass of positive evidence there is much more which, while not so positive, is not less convincing.

Regarding the use of milk of tuberculous cows, there is no room for argument. It certainly should not be used unless pasteurized or boiled. There is some dispute as to whether milk may contain the germs when the udder is apparently sound, but there is good evidence to show that this may be the case. An apparently sound udder does not guarantee wholesome milk.

If meat be thoroughly cooked it is probably not dangerous; but the question comes up as to the thoroughness of the cooking. Abundant experiments have been made in Europe which demonstrate that meat may be roasted or boiled and yet the center of a large piece may remain infectious. Certainly if tuberculous meat is put on the market, it should be put on the market and sold as tuberculous meat, and the consumer should be told that it should be thoroughly cooked. To say that the animal is in fine condition, is fat, that

the hair is sleek, that the eyes are bright, and that such an animal cannot be tuberculous is simply nonsense—foolish. The cow may be sleek and fat as you please, and fairly rotten with tuberculosis. This has occurred so frequently that there is no room for argument.

During the last twenty-five years our medical journals have published accounts of 195 typhoid-fever epidemics, 99 epidemics of scarlet fever, and 36 of diphtheria, all of which had been traced to the milk supply. Our federal bureau of public health and marine hospital service traced 85 of 866 typhoid cases in the District of Columbia to the use of milk. Note that this is about 10 per cent of the total.

Approximately one-half of the deaths in children less than one year of age are due to gastro-enteric disease, mainly infantile diarrhea; 54,047 deaths of infants have been traced with reference to feeding. Of these 86.6 per cent had used artificial foods. Cow's milk is the staple artificial food for infants. This makes or seems to make out a rather serious case against milk as the medium by which the injurious material was conveyed. Can medical men doubt that milk, or rather those who produce and handle it, must be held responsible for a serious and useless sacrifice of human health and life?

Recently the writer came across an interesting record of three cases of infectious enteritis in the human from milk contaminated with the excreta of a cow, and also an outbreak of scarlet fever which was traced directly to milk. There are plenty of instances of this kind for one who cares to pursue the study.

METHODS OF POLLUTION

Under very common conditions and methods of milking there is practically always more or less pollution. This comes from dust in the atmosphere, which may or may not be carrying dangerous bacteria. It may come from dirty cows; it may come from dirty hands of milkers; or from the clothing of milkers; or from milk utensils that have not been properly cleaned. Milk in transit is exposed to possible multiplication of germs from unclean containers and high temperatures. Bacteria of innumerable varieties and other foreign matter may have been left in vessels from previous use, and bacteria multiply with great rapidity at temperatures above 50 F. Contamination may occur in the city milk-shop, in the creamery, and in a variety of other places. In the city milk is exposed to contamination from filthy street-dust; to contamination from dirty

hands or clothing of handlers, or from impure ice or impure water used in diluting or washing.

A very objectionable procedure which has been reported where milk is sold in bottles, is that of collecting bottles which presumably have not been sterilized, possibly not washed, from one house, refilling them in the wagon en route to the next customer and then delivering the same bottles to another family. A better method for disseminating certain diseases could scarcely be suggested.

A few homely illustrations of points that are often overlooked will suffice. Milk should be removed from the barn as soon as drawn, and kept in a milk-house or room apart from the stable.

The milk-house should be screened. Flies should never have free access to milk or milk-containers after the latter have been cleaned. Think of the character and variety of filth and infection which flies may easily transfer to milk or container.

The milker should always wash his hands thoroughly before milking, and should then milk with dry hands. Think of the dirty personal habits of some milkers and the possibilities of contamination. How many milkers in the average city do carefully wash their hands before sitting down to milk?

A considerable number of milkers work with wet hands, i. e., they first milk on each hand, then commence milking into the pail with dirty milk-covered fingers. This sort of a thing isn't yellow journalism; it's cold history.

What about the shallow wells that receive surface drainage and are located in close proximity to the barnyard or, worse, the milk-house? Such water may be used for rinsing the cans perhaps after they have been scalded, a little of it may be used occasionally for dilution.

BACTERIA IN AIR

For the purpose of comparison later it may be interesting to study the prevalence of bacteria in free air from an open field or meadow with that taken from the barnyard and stable, as presented in Bulletin 91 from the Illinois Experiment Station. A large number of tests were made in an open field and an average of forty-three exposures gave but 0.9 of one colony. Fifty per cent of the plates were sterile. Of fifty-one tests made in the barnyard, 12 per cent were sterile, and the average was thirteen colonies per plate. Exposures made in stables under various conditions ran as high as 858 colonies per plate, and as low as two, depending on how dirty the stable, how

much dust and, in general, on what was going on in the stable.

When the barn had been emptied and quiet for several hours an average of six exposures gave but half a colony per plate. This means that the dust particles had settled, and there were no air currents to stir them up again. After the cows had been replaced in the stable, and the usual stable-operations had been gone through with the bacterial count per plate averaged 151 colonies and ran as high as 412, showing the effect of handling dry food and sweeping,—things which should not be done during milking or for a considerable period before milking.

A little later, after fifteen cows had been brushed, two exposures gave an average of 858 colonies per plate.

Another interesting experiment, if not an agreeable subject for consideration, was in a study of the amount of dirt which falls into milk during the process of milking, comparisons being made by weight. Seventy-five tests were made. The udders were divided into three groups:

Apparently clean, average amount of dirt from the muddy udders unwashed, was found to be about 0.88 of a gram.

From the udders slightly soiled there was about 0.13 of a gram.

From the apparently clean udders, about 0.01 of a gram.

The unwashed udders gave from $3\frac{1}{2}$ times as much dirt with the clean udders, to ninety times as much dirt with the dirty udders, as the washed.

The author of this bulletin concludes that by far the greatest amount of contamination comes from the udder under ordinary conditions of milking.

The bacteria that gain access to milk are not all disease-producing bacteria by any means, nor are they all bacteria capable of producing objectionable changes in milk. Many of them are milk-souring bacteria, others belong to the group which produces liquefying changes in milk. Some may be infectious-disease-producing bacteria.

In view of this prevalence of dust in dairy stables, and the fact that dust particles are usually bacteria-laden, it becomes a very interesting study, if one offers the query, what if these dust particles are carrying considerable numbers of the bacteria which produce red milk, or yellow, or green, or blue milk?

Or suppose that these dust particles are loaded with bacteria capable of producing butyric acid fermentation with its disagreeable odor.

These dust particles may also be carrying con-

siderable numbers of the germ that produces bitter milk, or specimens of the numerous varieties of bacteria that may produce ropy milk. These dust particles may be carrying bacteria that are capable of producing intensely active poisons like tyrotoxine. And suppose, further, that the milk is kept warm for a few hours.

A considerable portion of stable dust must be considered as filth, manure if you please, rather than ordinary dust. Dr. Marshall estimates that 50 per cent of the dirt that falls into the milk is soluble and of course cannot be strained out or removed under ordinary conditions. Other authorities state that 80 to 90 per cent is soluble. This means that only 10 to 20 per cent can be strained out, and that the uninviting collection that appears on the strainer represents only one-tenth or so, and the other eight or nine-tenths are in the milk to stay.

Backhaus is quoted as estimating that the people of Berlin swallow 300 pounds of this kind of filth per day, or about 109,500 pounds or fifty-four and a half tons a year. Quite a garden patch!

Manure from the dairy stable sometimes contains large numbers of tubercle bacteria and then it becomes something more than filth. In the course of some recent experimental work with manure from the tuberculin-reacting cows at the University of Minnesota Experiment Station, we have found one cow that gave very virulent manure as shown by guinea-pig inoculations. We found another cow that passed enormous numbers of an acid-fast bacillus, comparing closely in every way with the tubercle bacillus, but which, unfortunately, was not tested for virulence. However, this cow was known to be tuberculous. Imagine what could have easily happened with either or both of these cows in an average city dairy with manure smeared on the tail and thence on the udder and flank—and some one sits down to milk after it is dry.

Dr. Repp reported a very interesting case of tubercular cow in a paper before the A. V. M. A. in 1903, where tubercle bacteria occurred in the lining membrane of the intestine in enormous numbers, and in cover-glass smears from the surface of this membrane.

Drs. Schroeder and Cotton, in our Federal Bureau of Animal Industry, have reported concerning the manure of three lots of tuberculin-reacting cattle. In the first group of seven studied there were three passing manure capable of infecting guinea-pigs with tuberculosis; another lot of six (old chronics) were all passing virulent

manure. Of another lot of twenty-four cows taken from dairy herds around Washington City, ten were positive sources of danger in this way.

To make this a serious consideration it is not necessary to suppose that the manure becomes smeared on the udder or flank, although this would almost certainly occur. Suppose that it becomes dried on the floor, and particles float up in currents of air, what then? Here and there doors and windows are open and dust flies, settling in milk-pails or upon food soon to be given cattle, and infection of some one's children or some one's calves or hogs may easily follow. In this connection we see the serious importance of such considerations as those presented in work reported from the Connecticut and Illinois Stations, concerning stable-dust.

Tuberculous cows may unquestionably cough up, then swallow infectious material, and excrete tubercle bacilli in the manure. The cow may be a source of danger in this way, whether her disease be in either lungs or intestines.

The serious suggestion in this is that tubercular bovine feces may possibly contaminate milk intended for human food and infect the human.

All this is very unpleasant, disagreeable for me to say to a mixed audience and disagreeable for you to hear, but the health of our children is a vital matter, an item of vital interest to the family and of tremendous importance to our nation. It may be worth while to say and hear disagreeable things.

Milk is the most important single article of diet. It is used in enormous quantities, and should be; but it should be clean, mechanically and chemically, and free from disease germs. I would not have people use less milk, but rather more, and safer. Creamery skim milk in some states has already become a serious source of tuberculosis among hogs. If tuberculous milk may infect hogs, calves, guinea-pigs, and monkeys, it is not good enough for children to drink.

SOMETHING DUE FROM THE CONSUMER

There is another side to this question of clean and safe milk—the producer's side which we must not forget. He has rights, as well as the consumer. People must be made to realize the difference between good milk and bad milk, and be willing to pay for quality and cleanliness. It takes an intelligent man and a considerable knowledge to produce clean, wholesome milk. It is more expensive to produce milk of this kind, and we must be willing to pay for it. Very cheap brains and very dirty stables can produce dirty milk.

A single point will serve to illustrate. For preservation by cold, milk must be kept at 50° F. or below. A temperature of 58° or 60° is of little avail, for at temperatures above 50° bacteria in milk increase with marvelous rapidity.

A temperature of 50° or lower calls for ice, and ice costs money. If the consumer wants to have milk that has been kept cool, he must expect to pay for this increased cost. A clean dairy farm properly equipped and managed cannot compete on even prices with a dirty dairy. It is important that our people understand this.

Dr. Melvin of Washington, D. C., has recently recommended that city milk should be divided into three commercial classes, and sold as such as follows:

Class 1. Certified milk, which must be produced and kept under certain conditions, including the tuberculin test and veterinary examination of cows, and must answer to certain specifications concerning a low bacteria content not exceeding 10,000 per c. c. These dairies and their products are subjected to frequent inspection, the milk to be certified to by the health officer of the city. Such milk would presumably be prescribed by physicians for infants and invalids and be used by those who are willing to pay a little more for it.

Class 2. Inspected milk is to be produced and kept under certain specified conditions, including the tuberculin test, veterinary examination of cows, and a bacteria content not exceeding 100,000 per c. c.

Class 3. Pasteurized milk. All milk from dairies not able to comply with the specifications for Classes 1 and 2 is to be pasteurized, sold as pasteurized, and kept under specified conditions, before and after pasteurization. Cows producing this milk must be examined by a veterinarian, and any cow affected with a disease communicable to the human, or otherwise unfit for milk production, is excluded from the dairy where Class 3 milk is produced. Cows showing physical symptoms of tuberculosis would be barred. Cows responding to a tuberculin test, but not showing physical symptoms, would be allowed to remain in the dairy and supply milk for this class. Dr. Melvin proposed that Class 3 milk should be pasteurized at a central plant under official inspection.

There can now be no question but that Dr. Melvin is correct in the general proposition that milk for public consumption should come from tuberculin-tested cows or else be pasteurized.

This plan in honest operation would unquestionably effect great improvement.

Present methods of city milk inspection are perhaps a very decided improvement over the older plan of no inspection at all, and possibly progress has been made as rapidly as could be reasonably expected, and yet those who are familiar with this general question must concede that the present situation is unsatisfactory and not creditable to modern sanitation.

This paper is already long, for its purpose, and I cannot undertake to propose a revised system of milk inspection. Such a proposition in detail would have no legitimate place perhaps in this paper; but permit me to offer a sort of preliminary suggestion to the effect that the granting and maintenance of a license in our larger cities should depend more upon laboratory examinations than at present.

These examinations would cover not only butter-fat by the Babcock test; chemical examination for preservatives; specific-gravity test, etc., as now done; but, in addition, would also include such of the following as experience might justify: bacteria count; microscopic examination for pus-cells and fibrin, curd test, and perhaps chemical examination by some of the delicate bile reactions for evidence of manureal contamination and similar impurities; and centrifuging with microscopic and animal-inoculation test of sediment.

In other words, I would put up certain laboratory specifications to which milk must answer, and after reasonable warnings would revoke the license in case of failure to comply. The man who could not produce milk answering to the laboratory requirements would be barred. This does not imply that the veterinary inspector is to be ignored or his work in any way lessened. He should do the same work that he is doing now, but more carefully and thoroughly, and the laboratory man should do much more than he is doing—and better work. This proposition would imply that a large city should maintain a laboratory equipped for bacteriological, chemical, and microscopical work with milk, and perhaps other food material things, as well.

DIFFICULTIES ENCOUNTERED

Minneapolis was one of the first cities in the United States, if not the first city, to adopt a tuberculin-test ordinance, and St. Paul was very early in the list, so that we have had opportunity to study this work in Minnesota for a number of years. A number of difficulties have ap-

peared and some phases of the work are still far from satisfactory.

There has been difficulty in securing disinfection of stables after tuberculous cattle were removed. It has been very difficult to impress dairymen with the importance of refilling their stables with tuberculin-tested cattle. Our city health department employees have in some cases been political appointees, rather than men selected on account of fitness. There has been, of course, the usual difficulty of securing sufficient funds for municipal sanitary work. It has not been possible to re-test herds frequently enough to secure the best results. Difficulties have been discovered in the way of permanently marketing "tested" and "condemned" or "passed" cattle so as to avoid fraud.

There has been great difficulty for those managing city work to have milk from tested cows only. Mr. A has his herd tested; the cows react, and are taken to South St. Paul for slaughter. He replaces these with other cows which, as a rule, have not been tested, and these give milk for the public until the next test, which may be months or a year later.

On the other side of the question, there is satisfaction in the thought that a very large number of tuberculous cows have been killed, some of which otherwise must have been infecting people and spreading disease among cattle.

The question as to whether human and bovine tuberculosis are identical and intertransmissible need not concern us seriously in this discussion. We may consider this as almost or quite an academic question. Both parties to the controversy now agree—and this is the kernel of the whole matter—that man is susceptible to tubercle bacilli of either human or bovine origin, and that those from the bovine are distinctly more virulent. Your child should not be infected with either, and if affected with either it makes no practical difference which.

The situation becomes serious for the consumer, whether Dr. Koch was right or wrong concerning the point of identity.

Tuberculosis is not the only important consideration in connection with a clean milk supply. Milk should be clean and properly handled for other reasons just as important. It must not only be clean and kept in clean vessels, but it must also be cooled promptly to check multiplication of bacteria and must reach the consumer in the shortest possible time.

Cases of poisonous milk are usually associated

with undesirable methods of handling, and either filth has carried the poison-producing bacteria or they have gotten into the milk in less objectionable ways, and have there developed under conditions to which milk should never be subjected.

Persons affected with any contagious disease should not handle milk-vessels or milk intended for human food.

Authorities differ on many points: for example, as to whether milk from the depths of a normal udder is germ-free; they differ as to whether the bacterial count tallies with the amount of dirt; they differ on the significance of the bacteria count, but they all agree on the fundamental importance of health and cleanliness for the cow; cleanliness for the milk; cleanliness for utensils; freedom from dust and air currents in the stable; prompt cooling; and quick marketing.

It is important to realize that clean milk has wonderful keeping qualities—keeps wonderfully well if it is properly handled and clean enough. Promptly cooled and properly handled milk that changes rapidly is dirty milk, bacterially and presumably chemically and mechanically also.

At the national dairy show, held in Chicago, February, 1906, milk was shown under three classes,—“certified milk,” “market milk,” and “cream.” This milk was produced February 12 and packed in ice, and it scored on February 15. The showing was as follows:

BACTERIA

Certified milk, 0 to 51,000 per c. c.

Market milk, 400 to 21,000,000 per c. c.

Cream, 0 to 2,810,000 per c. c.

MILK KEPT SWEET (COLD)

Market milk, after five weeks.

Certified milk, after one week 50 F.

Cream, after seven weeks.

Think of it, normal milk sweet after five weeks, and kept so by nothing more than cold and its own cleanliness. Most people living in cities and purchasing milk have considerable difficulty to keep it sweet for twenty-four hours, and often it sours in twelve hours in a refrigerator. Mr. Gurler had milk on exhibition at the Paris Exposition sent from this country. His milk kept sweet long enough for the purpose, merely because it was clean and cold.

The milk winning the gold medal in the market class at the national dairy show was produced in a barn which was well lighted and ventilated, and had cement floors. The walls and ceiling were kept white-washed, and the manure was hauled directly to the field. Special care was taken to avoid dust in the stable during the time of milking, and the cows were kept clean. Surely there was nothing fanciful or very difficult or prohibitive about this for any city dairy.

We need to realize that good, clean, normal milk is the most important single article of diet in the whole list, and is indispensable.

We need to realize that milk may appear clean and be very dirty, and to realize that milk may be mechanically clean and bacterially or chemically very dirty, and that dirty milk is unsafe milk.

Our people have a right to ask that milk be free from dirt and filth, free from typhoid or diphtheria germs, and free from tuberculosis infection—and then they must be willing to pay a little extra cost of production.

THE DIAGNOSIS AND TREATMENT OF FOREIGN BODIES IN THE EYE*

BY CHARLES NELSON SPRATT, B. S., M. D.

MINNEAPOLIS

A foreign body allowed to remain in the eye will, in practically every case, sooner or later cause loss of vision in the injured eye and may lead to total blindness by setting up a sympathetic inflammation in the second eye. Particles of glass have been tolerated by eyes with good vision for years, but even these may lead to

loss of vision, due to chemical changes in the glass.

Conservative treatment demands that in recent eye injuries, the presence or absence of a foreign body be determined and its removal attempted. Every case in which there is any suspicion of a foreign body should have a prompt and certain diagnosis.

Allowing a foreign body to remain in an eye

*Read before the Hennepin County Medical Society.

means a long and painful convalescence, generally a blind, irritable, atrophic stump, and sometimes total blindness.

I will mention the different aids to the diagnosis of foreign bodies:

1. *History*—The statement of the patient or a companion will often be of much assistance in diagnosis. Often a large chip of iron or stone strikes the eye and is found by the individual, or the size of the object causing the injury will be known by the evidence of a fresh fracture of the tools. The fact that the injury was caused by a fork, a knife-point, scissors, or a piece of stick will often exclude the presence of a foreign body in the eye.

On the other hand, an injury from a gun or an air-rifle, with a wound in the eye, is presumptive evidence of the presence of a foreign body.

2. *Wound of Entrance*—A small, clean-cut wound of the cornea, if not caused by some pointed instrument, as a knife or needle-point, is almost positive indication of a foreign body in the globe. A corresponding wound in the iris with a traumatic cataract in most cases makes the diagnosis certain.

Gruening has called attention to the fact that if the iris is adherent to the wound, or if there is a prolapse, it is probable that a foreign body is not in the eye. In these cases the withdrawal of the object causing the wound allows the aqueous to escape. This washes the iris into the wound. A small, clean cut caused by a foreign body entering and remaining in the eye, will close almost instantly, and little or no loss of aqueous will result.

3. *Presence of Blood or Exudate in the Vitreous*—As a general rule, this indicates the presence of a foreign body. Blood may, however, be present in non-penetrating wounds.

4. *Lessened Resistance of the Eye to a Current of Electricity*—If the foreign body is metallic, a current of electricity will pass through the injured eye more readily than through the healthy eye. This method is indefinite and of no value if the material is stone or glass.

5. *Siderosis*—A piece of iron or steel in the eye after weeks or months will produce a brownish discoloration. This is a late sign and of no value in the diagnosis of recent wounds. The condition may also follow a cyclitis.

6. *Siderscope*—The deflection of the mag-

netic needle as a method of determining the presence of a metallic body when placed near particles of iron or steel, is made use of in some of the German clinics. The apparatus is complicated and is easily affected by external electrical apparatus, as street-currents, etc. It is of course of no value when the foreign body is lead, stone, glass, copper, etc.

7. *Use of the Magnet for Diagnosis*—If the particle suspected is of iron or steel, the patient is placed before a Haab or "giant" magnet. Pain, the sensation of a pull on the eye, or bulging of the iris or sclera is evidence of the presence of a foreign body. This has always seemed to me to be about as crude and unscientific as probing for a bullet. It is frequently misleading, and a negative test does not mean that iron or steel is not present. If the iron is imbedded in the orbit, has become encapsulated, is surrounded by exudate, or if it is of very small size the magnet is not only useless as a method of diagnosis, but is misleading. Certain nickle and other alloys are non-magnetic.

8. *Direct Vision or the Ophthalmoscope*—When the foreign body can be seen with oblique light or by the aid of the ophthalmoscope, the diagnosis is of course positive, and the location is known. Frequently, the media are so hazy that the interior of the eye cannot be seen.

X-rays—The fluoroscope is seldom of any aid. Good radiographs, on the other hand, if the suspected foreign body casts a shadow,—as metal, stone, lead, or glass,—furnish the most positive method of diagnosis. Every suspected case should have radiographs taken.

Although any of the above-mentioned methods may show the the presence of a foreign body in the eye, the location of the particle must be known if we are to remove it with the least injury to the eye. Placing the patient before a giant magnet and attempting to draw the suspected particle into the anterior chamber by brute force, as it were, not only fails in many cases, but the removal of the particle may cause more damage to the lens, iris, or ciliary body than the original injury.

A skiagraph being merely a shadow-picture, it is practically impossible to have more than a crude and indefinite idea of the location of the foreign body. I have several skiagraphs showing multiple shot in the eyes, face, and lids. One negative shows some thirteen shot, and it is absolutely impossible to say from the shadows which ones are in the lids or which in the eyes.

The only way to determine the location of a foreign body is by employing some method of triangulation. Mackenzie Davidson in England, Swett of Philadelphia, and Hulen of San Francisco have each devised methods of accomplishing this.

During the past three and a half years I have used Hulen's method with slight modification of the head-rest. By this method it is possible in most cases to locate bodies, no matter how small, to within one-half to one millimeter of their true position. I have had opportunity to test the accuracy of the method in four eyes that contained foreign bodies, but which required enucleation on account of panophthalmitis in one

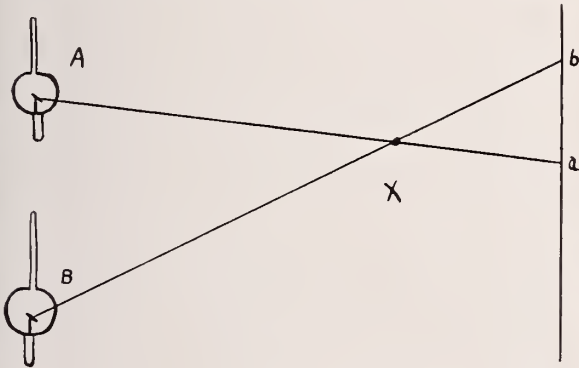


Fig. 1.

case, shot in two others, and failure to remove the particle in the fourth.

The principle of the method is as follows (Fig. 1): The position of the object (X) is unknown. Two lights (A and B) will each cause the object to cast a shadow ("a" and "b"). By drawing a line from each light to its shadow, their intersection will give the position of the object (X). In practice the method is slightly more complicated. As two exposures with the x-ray tube are necessary, it is essential that the eye and head be fixed. I have made the head-rest and plate-holder (Fig. 2) and used it with satisfaction. The patient bites an adjustable bar of wood with his teeth. This is more satisfactory and simple than strapping the head to a photographic plate. Allowing the patient to lie on his back is more comfortable than the sitting position. The plates are placed one at a time in the opening in the frame at the side of the head.

Before making the exposures a pin or small metal strip is fastened to the lower lid or a small ball, the "marker," attached to a head-band, is placed a measured distance in front of the center of the cornea. The distance between the

tube and the photographic plate is measured (generally 18 inches). The patient is directed to fix his eyes directly above, and one exposure is made. Without changing the position of his eyes a second exposure is made on a new plate after having moved the tube a known distance (3 inches) downward.

From these measurements the location of the small shot or "marker" can be determined. We know that this marker is a certain measured distance directly in front of the center of the cornea. An eye is drawn to scale in the proper position, and if a foreign body is present, its position

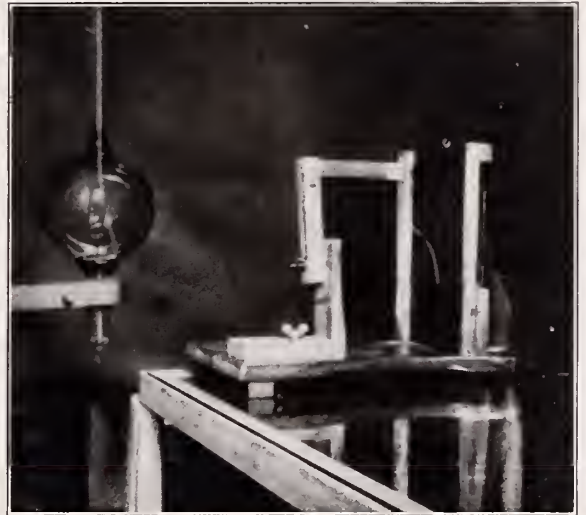


Fig. 2.

is determined just as the "marker" from the lines joining the position of the tubes to the shadows.

Treatment—If the foreign body is in the eye, removal should be attempted, as it is certainly not very advisable to allow a foreign body to remain. Although particles of glass have been known to remain in the lens for years without causing serious injury. Metallic bodies are certain to cause irritation, due to action of the fluids of the eye.

The methods of removal depend largely on two factors: (a) the position of the foreign body and (b) its composition. When the particle is in the anterior segment of the eye, it is best to remove it through a corneal incision. This is especially easy if it is of iron or steel, as the magnet may be used. Often an iridectomy is necessary and the foreign body can be removed with forceps. If it has lodged in the lens and a traumatic cataract forms, the particle can be removed with the soft lens matter by suction or

by an extraction of the lens.

If the particle is in the posterior segment of the eye (vitreous) and is of iron or steel, two methods are in use: First. The use of the Haab or "giant" magnet. The patient is placed before the magnet, and an attempt is made to draw the iron around the lens into the anterior chamber from which it is removed by a corneal incision. Second. After accurately determining the position of the foreign body by Sweet's or Hulen's method of localization, the conjunctiva is incised, and an opening is made through the sclera near the position of the foreign body. The steel is removed by means of a magnet-point inserted into the incision.

Of these two methods the latter has always appealed to me as being much the better, and is the one employed. The use of the Haab magnet without localization of the foreign body is a haphazard method. As has been stated, the foreign body may injure the lens and iris in attempting to draw the particle into the anterior chamber.

Many times, especially if the foreign body is very small or is held down by exudate, the large magnet will not draw it into the anterior chamber.

In some cases the particle, after localization, has been removed by the smaller magnet introduced through an opening in the sclera, when the large magnet had failed.

Objections have been offered that an incision is often made unnecessarily, as with the Haab magnet the particles could be removed through the original wound. As a rule the ophthalmologist does not see these cases until after the original wound has closed. In these cases there is no more danger to the eye from a new incision

than there would be from opening the original wound.

A second objection is the possible danger of infection from the introduction of the tip of the magnet into the eye. This seems rather trivial when precaution is taken to boil the instruments.

A third objection is loss of vitreous. It is doubtful if in such cases the same might not happen after the use of the "giant" magnet. In either case a slight loss apparently does no harm.

If the foreign body is non-magnetic, in some cases it may be removed from the vitreous by forceps or spoons. In such cases localization by skiagraphs is more essential than when the particle is of iron.

CONCLUSIONS

1. Except in rare cases a foreign body should not be allowed to remain in the eye.
2. Without the knowledge of the position of the foreign body, its removal is more a matter of chance and guess work rather than modern surgery.
3. A skiagraph offers little aid in giving the location of a foreign body. Some method of triangulation must be employed.
4. Foreign bodies can, by Hulen's method, be located to within a millimeter.
5. The removal of the foreign body, if iron or steel, by means of a magnet introduced into the eye through an incision near the foreign body, will generally cause less damage to the eye and will often succeed when the Haab magnet will not.
6. There are but two positive methods of determining the position of a foreign body: (1) by the ophthalmoscope or oblique illumination. (2) localization by skiagraphs.

REPORT OF A CASE OF ECTOPIC GESTATION IN WHICH THERE WAS EMPLOYED A NEW PROCEDURE SUITABLE FOR CASES IN WHICH THE FETUS IS LIVING*

BY JOHN P. DOUGHERTY, A. M., M. D.

WABASHA, MINN.

Mrs. J. K., a strong, robust woman, aged 41, while on her feet attending to household duties, was suddenly seized with an agonizing pain in the abdomen. Feeling herself about to faint from

weakness and from pain she hurriedly sought a chair and seated herself. Although she thinks she temporarily lost consciousness, she managed to maintain her position in the chair until she could be conveyed to her bed.

I saw her about a half hour after the onset of

*Read before the Wabasha and Goodhue County Medical Societies July 9, 1908.

the pain. I found her quite pale with a pulse of about 160, a slightly subnormal temperature, and a very rigid and tender abdomen, the point of greatest pain and tenderness being now well localized over the left ovarian region.

I enjoined absolute rest and quiet, gave one-fourth gr. of morphine hypodermically, and when the pulse got better, which it did in a short time, I left her. Within the hour I was again hurriedly summoned, and found that in my absence she had two sinking or fainting spells, but with little or no pain.

At this time and later the following points, having a possible bearing on the case, were elicited: She was the mother of eight children, labors and puerperia having been normal. She had had one miscarriage seven years previously, followed, however, by no complications. She had two normal pregnancies following the miscarriage. Her youngest child was three years old. Her menstruation during the past three years was normal until the onset of the present illness, with the exception that she had not menstruated during the past six weeks and was therefore two weeks overdue. The day preceding the attack above described, she had occasional colicky, bearing-down pains, which she thought were due to an oncoming menstruation. After the onset of this terrible attack, there was a slight, dark, foul-smelling, bloody vaginal discharge.

Drs. Lester and Bond were summoned in consultation. We decided that as it was a fairly clear case of ruptured extra-uterine pregnancy, it was best to make no vaginal and only the most superficial abdominal examination. Examinations of the heart, lungs, and urine disclosed no abnormalities. It was decided to wait several hours before operating. Accordingly about ten hours after the attack, when the pulse had slowed down to about 120, she was put on a cot and very carefully taken to the hospital.

Vaginal examination immediately preceding the operation showed the uterus slightly enlarged, much more nearly parallel with the axis of the body than in its normal position of anteversion, and with a hard cervix showing an old laceration. It was definitely determined that there was a mass at the left of the uterus. It was thought best not to try to obtain any more definite information by prolonging the examination.

When the patient was anesthetized, a free incision was made between the pubes and umbilicus. The table was raised, and the patient put in the Trendelenburg position. On attempting to introduce the hand into the pelvis a most

alarming quantity of blood poured through the abdominal wound. On pulling the uterus and tube into view, however, this was found to be mostly blood already extravasated. Some of the blood was freshly coagulated, and one mass about the size of a man's fist was not only coagulated but was very black and inspissated, showing, as we thought, that considerable hemorrhage had been going on for at least a day or two.

The enlarged middle third of the tube formed the sac, and was in size larger than a pigeon's egg. A ragged rent, about one-fourth inch long, showed where the partial rupture had occurred. A part of the mesosalpinx, including all the palpable and easily visible vessels, was ligated. A ligature also encircled the tube on either side of the tumor.

The clots were hurriedly and perhaps incompletely removed from the pelvis. A gauze drain was inserted in the pelvis to the broad ligaments encircling the tumor. The gauze also encircled a glass tube which extended only to the tumor. The abdominal wound, with the exception of the drainage-opening, was closed. The gauze was removed on the eighth day and a rubber tube inserted, which was gradually shortened until it fell out. The post-operative history was uneventful. The gestation-sac was supposed to have broken down and disintegrated a short time after the operation—at any rate it gave us no further trouble and did not grow perceptibly. The patient is living and well today, two years after.

The above is a brief but essentially complete history of the case.

We will now go back and discuss a little more fully the surgical procedure. The gestation-cyst was left intact. In this it differed from any operation for extra-uterine pregnancy of which I have any knowledge. The procedure has some points in its favor, and is, of course, not without its disadvantages. The immediate danger of hemorrhage was entirely done away with by the simplest and most effective method. It may be objected that if all the blood-vessels were ligated, the circulation in the tumor was cut off and it might as well be removed, and that, on the other hand, if all the blood-vessels were not tied the danger of hemorrhage was not obviated. When we consider that in hemorrhage of the hand from the palmar arches it is sometimes good surgery to ligate the brachial or even the third part of the axillary artery, and that this ligation is a very effective method of controlling the hemorrhage, and that it is not followed by sloughing

or gangrene of the arm we get a better idea of the effectiveness of the analogous procedure just described, and how, when enough of the mesosalpinx is left outside the ligatures, the collateral circulation may readily nourish the sac and keep the fetus alive.

Right here a rather serious objection to the procedure presents itself. After the circulation is re-established through the enlargement of the collateral blood-vessels, continued growth of the fetus will produce further tearing of the tubal pseudo-uterus with recurrence of the hemorrhage. To obviate this we should envelop the gestation-cyst with gauze, as was done in the case reported, so that the secondary hemorrhage can occur only within the gauze or within the adhesions which will have formed outside the gauze encapsulating the entire mass. If thought advisable the gauze may be stitched to the broad ligament and mesosalpinx to make sure that the gestation-cyst is completely enveloped. Water-proof material may be used in place of or in conjunction with the gauze.

Another procedure, which may be attempted if time permit, is to slit open the tubal covering, being careful not to injure the amniotic sac, with the idea of safely completing the rupture, which may be inevitable if the fetus continue to grow.

A third plan, which may be followed in suitable cases, is to free the tube from its distal attachments, cut as much of the mesosalpinx as may be necessary, preserving intact the tube's attachment to the uterus and suturing the gestation-cyst extraperitoneally in the abdominal wall where it will be within easy reach, and any hemorrhage may be easily controlled. There would, of course, be no reason for employing this method or any of its suggested modifications in cases in which the fetus was dead. In the reported case the fetus was, in all probability, living.

Few men in operating for extra-uterine pregnancy ever give a thought to the question as to

whether the fetus is living or dead; yet a living fetus is a human being with a right to its life. But it is objected the fetus is sure to die anyway, and so it might as well be destroyed. That, of course, is not true. There are forty or fifty cases on record in each of which the fetus went on to viability and was delivered by an abdominal section, but it would make no difference if it were true. The doctor who destroys a fetus just because it has no chance of living is in very much the same position as a certain William Jones whom I remember reading about in an old seafaring novel. William Jones objected to murder, but he had been in the habit occasionally of kicking half drowned and dying sailors into the sea, thereby shortening their sufferings and their lives.

But physicians argue that it is necessary to destroy the fetus to save the mother's life. It is a debatable question whether it is ever necessary to deliberately kill the fetus in extra-uterine pregnancy to save the mother's life. I seriously doubt if it is ever really necessary under any circumstances, whether it be in extra-uterine pregnancy or in any other condition, to kill the child to save its mother. My limited experience teaches that temporizing measures are used too little in these cases. To destroy the fetus may be, and I believe frequently is, the safest and simplest method. That it is the only method, or that it is ever really necessary, I doubt.

If, however, this improbable condition should present itself, I think that we as physicians will do our duty best if we remember that there are powers and rights which even a medical diploma cannot give, and that if we once admit that under any circumstances it is allowable for us as physicians to take human life, then we admit as corollaries the principles on which the criminal abortionist bases his defense, and we contribute our quota as teachers to lessen the respect for human life which is already valued too lightly among the American people.

LAPAROTOMIES DURING PREGNANCY*

By CARL J. HOLMAN, M. D.

MANKATO, MINN.

Mrs. J. C., aged 25, married several years, came to us for differential diagnosis between ovarian cyst and pregnancy. The examination

and history showed her to be three months pregnant. About the fifth month she suffered an attack of illness characterized by pain in the right side, nausea, and vomiting, and elevation of temperature and pulse.

*Read by invitation before the Southern Minnesota Valley Medical Society, July 16, 1908.

She was treated expectantly for several days, but the pain became so severe that the patient was removed to the hospital, and after three or four days the symptoms improved and she returned to her home without operation, much to her and our regret, because during the next four months she suffered much pain and discomfort, and many times she wished that her appendix had been removed. One year later she was operated on for the removal of a right cystic ovary and a chronically inflamed appendix and resection of the left ovary. Since then she has given birth to a child, which is now five or six years old. Her last gestation was associated with no abdominal pain.

Miss L., aged 20, waitress, seven months pregnant, called me early one morning. I found her with rapid pulse, temperature elevated, nausea and vomiting, and acute abdominal pain in the lower right quadrant. Vaginal examination revealed a baggy mass in Douglas' sac. Treatment was expectant.

Examination in the hospital three or four days later showed a collection in the cul-de-sac, which was drained through the vagina, letting out perhaps a pint of pus. Interrogation into the history revealed the fact that ten months previously the patient had passed through an attack of illness, which was diagnosed as appendicitis by her physician.

Mrs. L., six months pregnant, suffering much pain in the right side. Examination by Dr. Thompson of St. James revealed appendicitis. The patient consulted Dr. Curran, who confirmed the diagnosis and operated that evening, and removed a large appendix. The gall-bladder was found negative. Convalescence was uneventful. She gave birth to a living child at term.

Mrs. A., aged 23, two months pregnant, suffered great pain in the left pelvic region. Examination revealed a left ovarian cyst. The patient consulted Dr. Schmitt, who confirmed the diagnosis. Upon operation a left ovarian cyst was found and removed, as was also the appendix. Recovery, uneventful; and pregnancy terminated at term with a living child.

Mrs. W., aged 37, normal menstrual history, married eleven years, never has been pregnant, now and for some three months has felt some discomfort in the lower abdomen, which has been greatly enlarging. She says she can feel a large bunch in her left side, which is as large as her fist, and another bunch in the right side somewhat smaller. Examination showed that

the uterus is generally enlarged to correspond with five months' pregnancy. Tumor in left side as large as an orange; on right side as small as a lemon. Diagnosis: five months pregnant, complicated with fibroids. Laparotomy, with removal of the tumor as large as the patient's two fists from the right side of the uterus and a smaller one from the left side of the uterus; hemorrhage somewhat profuse, but arrested with catgut ligatures. Uneventful convalescence, and the patient is expected to be confined at any time. (Since above was read the patient has given birth to a female child.)

Mrs. P., aged 35, trained nurse by occupation. Two years ago she submitted to a laparotomy for the removal of the right ovary and appendix. I was called to see her about five o'clock one morning, and upon my arrival at the home, I learned from her that she had not menstruated for three months, and during the night she was taken with severe sharp pains in the lower abdomen and associated with this there were nausea and vomiting. The vomitus was of a dark brown character, quite offensive to the smell. In her opinion she had a strangulated hernia and consented to an exploratory incision, which was done, revealing a large ovarian cyst, which was removed, and the uterus was thought to be about three months pregnant. Uneventful recovery, patient returning to her home in about two weeks. She is now about eight months pregnant and expects to be delivered of a living child.

Mrs. R., age 37, referred for confirmatory diagnosis and operative treatment by Dr. Forbes of Winnebago City. Had for the last ten days been suffering with acute gastro-intestinal disturbance. Pain radiating to right shoulder blade; nausea and vomiting. Laparotomy was removal of two hundred gall-stones and appendix. Uterus three and one-half months pregnant. Uninterrupted recovery and delivery at term.

From the histories we have reviewed it will be seen that the most frequent conditions which demand surgical intervention during the puerperium are appendicitis, ovarian cyst, fibroids of the uterus, and gall-stones. Many mild cases of appendicitis have no doubt been overlooked, and in discussing this subject a distinction must be made between the mild catarrhal type, associated with mild symptoms, and the severe septic type due to perforative appendicitis. Undoubtedly, many of these latter are diagnosed as puerperal infection, especially those coming on after delivery. In slight cases the nausea that may be present is apt to be considered as due to pregnancy. Pain is often regarded as due to pelvic inflam-

mation or, in some cases, to threatened miscarriage. An ovarian cyst may become twisted upon its pedicle at any time, causing either gangrene or rupture, and making a diagnosis of the condition somewhat obscure. This I have seen twice, once in a case of pregnancy at two months, in the practice of a prominent Chicago gynecologist who had diagnosed ruptured ectopic gestation, but upon opening the abdomen it was found to be a ruptured ovarian cyst due to the torsion of the pedicle. Another case in my practice is a maiden lady of forty, stout, suffering a great deal of abdominal pain, and the condition was thought to be an obscure hernia, but upon exploratory incision a large ovarian cyst, as big as my two fists, was found to be twisted upon its pedicle, and gangrene had commenced.

Let us now consider fibroids during pregnancy. The majority of these patients will no doubt pass through their pregnancy with no special treatment. The location of the tumor is of importance. Those occupying the posterior uterine wall and attached low down will undoubtedly cause trouble. Such a condition it was my pleasure to observe in the practice of the late Dr. Henrotin. The young woman presented herself at his clinic five months pregnant with fibroid of the lower uterine segment. In his opinion it was impossible for her to go through the pregnancy with such a large fibroid, it being as large as a small football; so he induced labor and after that laparotomy, with removal of the fibroid, doing a myomectomy.

Complications may be due to the abnormal attachments of the placenta, and post-partum and puerperal hemorrhage may occur if the fibroid is attached to the uterus by a pedicle. Torsion of the tumor might occur with resulting gangrene. If hemorrhage occurs post partum, the uterus should be explored, and sometimes a fibroid may be found, which is easily enucleated, after which the uterus should be packed with gauze. Ergot should be used. If the tumor is in the fundus we may have inversion of the uterus, which calls for immediate enucleation and possibly hysterectomy. If the tumor is in the interior wall of the uterus, the patient may be placed in the knee-chest position, and the head may descend through the birth-canal. Drs. Mayo and Murphy both make the statement that, if you have pregnancy associated with fibroids and you deem it not a case for myomectomy, you should wait until eight and one-half months, when the Porro operation can be done

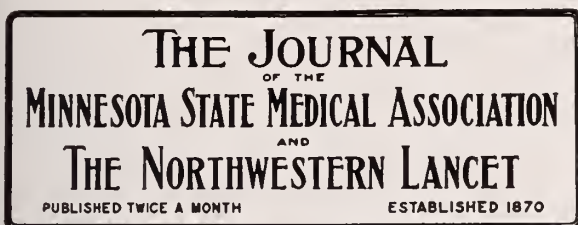
successfully, giving you a living mother and a living child.

Now, as to the cause for appendicitis during pregnancy: it is thought by some that there is greater tendency to intestinal toxemia during pregnancy, and one would expect more frequent appendiceal and gall-bladder involvement. As to the diagnosis of surgical conditions during pregnancy: the features of an acute attack are generally recognized, but in other circumstances it may be difficult to form an opinion. In slight cases we are apt to attribute nausea, which is present, to the pregnant condition. Pain is often thought to be due to old pelvic inflammation or to threatened miscarriage. If we have nausea, and pain in the right side, with muscular rigidity of the right side, the possibility of appendicitis should be kept in mind. The microscope may help us somewhat when we think we are dealing with appendicitis or an infective process, because of the leucocytosis, which may be present moderately in pregnancy, but if you have high leucocytosis you may expect pus. If an operation has been decided upon, then the blood-count will not be of any material aid. The leucocytosis may be thought to be that of pregnancy, but when associated with pain, muscular rigidity, nausea, and vomiting, it at once becomes of diagnostic value. The differential diagnosis would be from gall-stones, possibly gastric ulcer, pyelitis, kidney-stone, ovarian cyst, or ovarian or tubal abscess.

The treatment of the surgical condition within the abdomen during pregnancy should be the same as emergency treatment at any time. In mild cases of appendicitis, treat the patient expectantly. In the presence of perforation or abscess, immediately operate. Gall-stones or cholecystitis should be treated equally as successfully during the pregnant condition as at any other time. An ovarian cyst should be removed without inducing miscarriage. If myomectomy is thought advisable, it should be done successfully during pregnancy.

A CASE OF UNILATERAL THIRD NERVE PARALYSIS

J. Jay Kaiser, of New York, describes a case of complete third nerve paralysis. The symptoms are drooping of the upper eyelid, internal strabismus, and dilatation of the pupil. Syphilis plays an important part in its etiology.—Medical Record.



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MIGRAINE OR EPILEPSY?

The study of migraine and epilepsy is an exceedingly interesting one, particularly if an attempt is made to establish a close relationship between these two forms of neurosis.

Neither has a definite or uniform pathologic basis. In the majority of cases there is no demonstrable lesion. In a few cases errors may be found that fall simply into an etiological classification, and the correction of these errors may relieve or abolish the neurosis. In many cases there are symptoms common to both diseases, but where the investigation has been carried out in a careful manner the diagnosis is usually clearly defined.

Dr. A. A. Hubbell, of Buffalo, N. Y., a victim of migraine himself, has investigated the subject exhaustively in a paper read before the joint session of the sections of Ophthalmology and Nervous and Mental Diseases of the A. M. A. His title, "Relation of So-called Ophthalmic Migraine to Epilepsy," brings out the various diagnostic points very clearly. He admits the association of the two disorders in the same individual, but emphatically denies that there is a kinship or transformation between the two conditions. They are distinct and separable. He believes the

ophthalmic migraines are of cortical origin and that refractive errors may have something to do, indirectly, with inducing this form of migraine, but he is not sure that they are the essential cause.

Not many years ago the oculists believed that the majority of cases of ophthalmic migraine were due to errors of refraction, and they endeavored to prove this point by curing migraine by muscle-tenotomy, or the adjustment of glasses to overcome errors or unbalanced muscles.

Even Sir William Gowers, the celebrated neurologist, has changed his views decidedly in regard to the relationship between epilepsy and migraine, and he now states that "the traces of a definite relation of migraine to epilepsy are slight." Both disorders are admittedly of cortical origin, but the clinical pictures are more clearly outlined when the symptoms of each are more carefully investigated. Dr. Hubbell is positive in his statements that migraine does not merge into epilepsy, a comforting view to many sufferers.

Epilepsy is usually explosive in character, while migraine is slower in development and reaches its climax in a more deliberate manner. The visual disturbances in migraine are very characteristic, and there are no lapses of consciousness or convulsions. Epilepsy not infrequently leads to insanity, while migraine does not. This latter point is not necessary in the differentiation of these disorders, as there are frequent illustrated cases of migraine that become insane. Not that the migraine is the cause, but the inherent instability of the individual, who by various by-ways, becomes insane, as does the individual who has never suffered from migraine.

Dr. Spiller, of Philadelphia, is inclined to believe there is a very close kinship between the two disorders, and he cites cases in which the differential diagnosis is embarrassing. The majority of writers believe, however, that the two neuroses are not related and should not be confounded. That the two may be present in the same person cannot be disputed, even though the milder forms of epilepsy may be looked upon by some observers as ordinary sick-headaches.

THE PANCREATIC DRAMA

The close relationship between the liver and pancreatic ducts accounts for the frequent errors in diagnosis when the gall-bladder or the pancreas is the seat of disease. When a picture or diagram of the gall-bladder, the cystic, hepatic,

and common ducts and the pancreatic duct is before us, with the duodenum in the foreground, it is not difficult to appreciate the failure to recognize many of the diseases which may occur in the upper abdomen. Gall-bladder disease and particularly gall-stones are looked upon as easy of diagnosis, but when the abdomen is opened and neither of these conditions is found the surgeon must look to the pancreas for the explanation of symptoms that are frequently overlooked.

It is admitted that in gall-bladder diseases in which stones are found, not only in the bladder, cystic, and common ducts, but also in the hepatic duct, the diagnosis is comparatively simple, yet the diagnostician or surgeon must not be satisfied with his investigation or findings until he has thoroughly surveyed the pancreas and its outlet. In a majority of cases these various ducts follow a fairly uniform course and terminate in the expected anatomical manner. The exception to the rule will often explain a chain of symptoms or an unlooked-for pathologic lesion. The presence of a stone low down in the common duct may not only cause obstruction of liver and gall-bladder secretions, but may interfere with the duct from the pancreas and bring about an acute or chronic inflammation of the "abdominal salivary gland." Infections of the gall-bladder or ducts or of the duodenum may find their way into the pancreatic duct and set up inflammatory disease in the pancreas. The symptoms of chronic disease of the liver, gall-bladder, and pancreas cannot always be differentiated even though the most careful methods of analysis are employed.

The surgeon has been of great assistance to the internist by his exploratory work, and it is now possible to consider at least the probabilities of a disease of the pancreas.

From a review of recent literature the recognition of a chronic pancreatitis is not far distant, in spite of obstacles that confront the internist. The surgeon who makes a positive diagnosis of gall-stones must be prepared to modify his opinion and admit the existence of disease in other organs adjacent to the gall-bladder field. Evidently the most probable complication in obstructions of the liver ducts is pancreatitis, due to the fact that nearly two-thirds of the common ducts are surrounded by the head of the pancreas, which, if swollen, may cause obstructive jaundice. If obstruction of the common duct is diagnosed early, and operative measures are employed, the damage to the pancreas is nominal, but if the obstruction is allowed to continue, and expectant treatment is pursued, the result is uncertain.

Many chronic cases in which indigestion, jaundice, vomiting, and emaciation are commonly associated may be relieved by removing the obstruction of the ducts and draining them, directly or indirectly.

The use of drugs or ferments in chronic pancreatitis, due to obstructed ducts, is a waste of time, and unless the cause is removed at a fairly early date no improvement can be rationally looked for by the surgeon.

The more one considers the subject the more necessary it seems to make an early diagnosis to prevent the many complications which may arise in this important field where so many organs lie that cause continued and untold suffering.

A study of the normal anatomy in this region and the anomalies that are frequently found, is one that should appeal to every student of medicine.

CORRESPONDENCE

AN EXCELLENT SUGGESTION

Minneapolis, August 22, 1908.

TO THE EDITOR:

THE JOURNAL-LANCET has several times during the last year called attention to improvements in the work of the annual meeting of the State Association, such as a two-day session, a shorter program, more carefully prepared papers, etc. I wish to add for your consideration two suggestions that have frequently recurred to me since the last meeting.

1. Have one-half day of the two days given to a simultaneous and separate medical and surgical session. Such a short conference would not "divide" the session in any way, but would furnish an opportunity during the meeting in which medical men could get close together and discuss the finer points of strictly medical cases, and surgeons during the same hour could consider surgical technic and methods of no direct interest to the internist. Most of the time and most of the papers would deal, as in the past, with general subjects in which the surgeon and internist are jointly interested, but the short, separate conference would permit a fuller discussion of special features of these topics. It would avoid the necessity of trying to discuss together such broad subjects as "disease of the kidneys," "disease of the lungs," etc. As treated in the program of 1907, a program which demonstrated that such papers must be little more than a partial outline

of the subjects as treated in the text-books, and such discussions, limited by time, are too general to be of much benefit to anyone.

2. Let the next (Minneapolis) meeting be held on the University Campus.

The state meeting should aim to give us all a real impetus to better work for the coming year. At such a time it is pleasant to eat and drink together, to visit informally with each other, and to spend a part of the time sight-seeing. I believe, however, the annual meetings would be more appreciated and better attended and call out greater effort if the opportunities for professional improvement were increased to the exclusion of other features. At the University the very atmosphere would be conducive to investigation and asking questions. Our old teachers are there in the old surroundings ready to instruct informally. The material for illustration and demonstration is here to be utilized, both for the formal program and for individual investigation. Think of what exhibits Drs. Erdman, Lee, and Wesbrook could "lay out" for us, and in how short a time some of us who have been in practice long enough to learn what we need to know could fill in some of the gaps we have been conscious of during the past year. I predict that many would stay over for a few days to continue work casually started and would look forward to the next meeting in the laboratories with a new zeal.

I for one enjoy the smoker, the banquet, the trolley-ride, and sight-seeing at the annual meeting, but if the scientific spirit and the opportunity for study existed I would prefer to make use of it and reserve the outing for a longer visit to lake and wood at a more suitable time. I have talked with several men who feel the same way. As for good fellowship, which is very important to the success of our State Association, an earnest spirit and the opportunity for working together will develop that more than any other one thing.

Fraternally Yours,

SOREN P. REES.

MISCELLANY

THE MINNESOTA SANITARY CONFERENCE

An attempt was made several years ago to establish a Sanitary Conference, but this was a failure. The revised statutes of 1905 provide

that every county shall have a county health officer with certain duties to be prescribed by the State Board of Health. Among the regulations established for the county health officers is one (No. 68) requiring such officers to assemble once a year to discuss general sanitary problems and to present at such conferences the special sanitary needs of their individual districts. Using this conference of county health officers as the basis, an attempt has been made to establish a sanitary organization for the state under the name of "Minnesota Sanitary Conference." All county health officers are required to attend this conference, and a ruling has been given from the Attorney-General's office to the effect that they are entitled to their expenses while so doing. It is hoped that the health officers of cities and villages throughout the state will join this Conference. Of course the cities and villages should pay the expenses of such officials while in attendance upon the same.

Plans are being made to hold the second meeting of county health officers (Minnesota Sanitary Conference) at the Capitol Building, St. Paul, October 6, 1908. The Conference will hold its first session at 10:00 a. m. on the date specified. This date was chosen because it is the day preceding the meeting of the State Medical Association.

The sanitary conditions throughout the state are of sufficient importance to call for a large attendance at this Conference.

It is not the purpose at this Conference to listen to papers, but rather to present topics for discussion. A preliminary program has been arranged as follows:

PROGRAM

Roll-Call by Counties.

Address by President, Dr. T. C. Clark, Stillwater.

Appointment of Committees.

Report of Secretary.

Report of Committees.

Topics for Discussion.

1. What provision can be made for hotel inspection?—Dr. M. Thrane, Madison.

2. A license system for sanitarians and sanitary inspectors.—Dr. F. F. Wesbrook, Minneapolis.

3. What provision should be made for the local care of tuberculous patients by municipalities?—Dr. D. B. Pritchard, Winona.

4. What provision should be made for the local care of tuberculous patients by counties?—Dr. E. H. Bayley, Lake City.

5. What shall be done to secure local meat inspection?—Dr. F. R. Huxley, Faribault.

6. How shall county health officers be appointed and paid?—Dr. A. G. Liedloff, Mankato.

7. What arrangement can be made for the medical

care of communicable diseases?—Dr. E. L. Tuohy, Duluth.

8. The duties and opportunities of county health officers as educators of the public.—Dr. B. W. Kelly, Aitkin.

9. School Inspection.—Dr. J. W. Robertson, Litchfield.

10. Standard fees for county health officers.—Dr. H. M. Workman, Tracy.

11. Is it advisable for county medical societies to invite the county board of health, county commissioners, county attorney, county superintendent of schools, and the local boards of health throughout the county, including boards of supervisors, to meet with them for the discussion of sanitary problems?—Dr. D. N. Jones, Gaylord.

12. The country slaughter house problem.—Dr. C. L. Scofield, Benson.

13. The control of rabies.—Dr. A. Sweeney, St. Paul.

14. A law relating to water systems and sewage-disposal plants.—Professor F. H. Bass.

15. The present smallpox situation in Minnesota.—Dr. G. W. McIntyre, St. Peter.

16. The quarantine of diphtheria.—Dr. J. M. Armstrong, St. Paul; Dr. R. D. Zimbeck, Montevideo.

17. The feasibility of county medical societies establishing local tuberculosis camps during the summer season at least.—Dr. J. E. Crewe, Rochester.

18. Smallpox in Minnesota.—Dr. H. M. Bracken, St. Paul.

19. The typhoid-fever epidemic at Mankato.—Dr. A. O. Bjelland, Mankato; Dr. H. W. Hill, Minneapolis; Professor F. H. Bass, Minneapolis.

20. What additional regulations ought to be formulated to govern the actions of county health officers?—Dr. F. R. Weiser, Windom.

Dr. M. A. Mellenthin, a recent graduate of the State University, has located at Janesville.

A home is to be built for the use of the nurses connected with the Minot (N. D.) hospital.

Dr. Oscar T. Benson, of Glen Ullin, N. D., a State University graduate, was married last month.

Dr. E. C. Schoonmaker, of Perham, has gone to Mercedes, Texas, and will engage in fruit-farming.

Dr. T. W. Stumm, of St. Paul, who has been studying in Vienna since the first of the year, has returned.

Dr. F. J. Campbell, of Fargo, N. D., is home from Europe where he has been studying for several months.

Dr. Gustave Golseth, of Jamestown, N. D., has returned from Europe where he has been doing postgraduate work.

Dr. A. M. Adsit, of Hastings, has built a new business block, the upper story of which will be used for hospital purposes.

Dr. J. B. Naftzger, of Sturgis, S. D., has returned from a year's special course in eye, ear, nose, and throat in the leading medical centers of Europe.

Dr. A. B. Collins, who has been on the staff of St. Mary's Hospital at Rochester for the past year, has formed a partnership with Dr. C. F. Lewis, of Austin.

Dr. John E. Hoyt, who was formerly connected with the St. Peter Hospital and is now in general practice at Potlatch, Idaho, was married last month to Miss Ethel Case, of Minneapolis.

Dr. Helen Berckman has resigned her position in the laboratory of St. Mary's Hospital at Rochester, and has been succeeded by Dr. Margaret Smith from the State Hospital of Rochester.

Dr. M. L. Goldberg has sold his practice at Twin Valley to Dr. Harold Pederson who has been an interne at the Swedish Hospital in Minneapolis since his graduation last year from the State University.

Dr. A. B. Ancker last month celebrated the twenty-fifth anniversary of his connection with the St. Paul City and County Hospital. The nurses of the hospital gave him a beautiful loving-cup. His work has been eminently successful.

NEWS ITEMS

Dr. I. M. Roadman has moved from Bovey to Onamia.

Dr. Andrew Brash, of Texas, has located at Presho, S. D.

Dr. Fred V. Lyman has moved from Beltrami to McLean, N. D.

Dr. Charles Cowgill, of Redwood Falls, has located at Iroquois, S. D.

Dr. J. E. Corrigan has moved from Canton, S. D., to Spooner, Minn.

Dr. Karl Gryttenholm, of Zumbrota, has gone to Europe for a couple of months.

Dr. James Halliday has moved from Reynolds, N. D., to Mohall, in the same state.

Dr. M. J. Kern, of St. Cloud, has returned from an eight months' trip to Europe.

Dr. Charles D. Harrington is a candidate for the office of coroner in Minneapolis.

Dr. Charles F. Bower, who studied medicine while acting as a clerk for Senator Kittredge, of South Dakota, at Washington, has located for practice in Hartford, S. D., taking the practice of Dr. Joseph Schwartz, who removes to Sioux Falls, S. D.

Our Lady of Lourdes Hospital of Hot Springs, S. D., will soon begin the erection of a \$50,000 addition to their present building. The new building will be thoroughly modern, and the Battle Creek (Mich.) methods introduced. All private rooms will have bath and toilet.

Governor Johnson has appointed the following physicians to represent Minnesota at the International Congress on Tuberculosis to convene this month in Washington:

From Minneapolis—Dr. H. M. Bracken, secretary of the State Board of Health; Dr. J. W. Bell, Dr. J. G. Cross, Dr. George D. Head, Dr. W. A. Jones, Dr. A. C. Cullom, Dr. George F. Roberts, Dr. T. S. Roberts, Dr. F. F. Westbrook, Dr. P. M. Hall, Dr. J. F. Corbett. From St. Paul—Dr. J. W. Armstrong, Dr. Burnside Foster, Dr. A. J. Gillette, Dr. C. L. Greene, Dr. Henry Hutchinson, Dr. F. D. Ketchum, Dr. A. G. Renz, Dr. M. S. Whitcomb, Dr. S. H. Ward, Dr. H. L. Taylor. From Stillwater—Dr. T. C. Clark, Dr. O. A. Mack, Dr. L. N. Mead, Dr. B. J. Merrill. From other cities—Dr. J. B. McGaughey, Winona; Dr. C. H. Mayo, Rochester; Dr. E. H. Bayley, Lake City; Dr. J. L. Camp, Brainerd; Dr. J. E. Crewe, Rochester; Dr. W. E. Harwood, Eveleth; Dr. H. Holte, Crookston; Dr. W. H. Magie, Duluth; Dr. Walter J. Marcey, Walker; Dr. C. W. Moore, Eveleth; Dr. C. L. Scofield, Benson; Dr. F. M. Smersch, Owatonna; Dr. O. W. Stinchfield, Rochester; Dr. H. A. Tomlinson, St. Peter; Dr. G. S. Waltram, Warren; Dr. G. B. Weiser, Windom; Dr. L. B. Wilson, Rochester; Dr. H. M. Workman, Tracy.

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etc., for sale, including good-will of business. Sickness reason for leaving city. Address W. M., this office.

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\$300 static and x-ray machine. Good as new. Will trade for good single driving horse. Address E. S., care of this office.

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PRACTICE FOR SALE

General practice with excellent opportunity for special eye, ear, nose, and throat work. Appointable party. Growing town of 6,000 to 7,000. Investments for two railroads and 15 or 20 old-line life-insurance companies can be transferred to suit. Office furniture included in sale. Must be taken at once. Address M. B., care of this office.

LOCATIONS FOR PHYSICIANS

We are informed that there is a good opening for a physician, preferably one who speaks Norwegian, at Knox, N. D., the adjoining territory without a physician being very extensive. Information concerning this place may be had by writing A. F. Kencke, the local pharmacist. Beltrami, Minn., is also without a physician, Dr. F. V. Lyman having left unexpectedly for a larger field at McLean, N. D. No doubt Dr. Lyman will give full information about Beltrami.

TO THE PROFESSION—X-RAY LABORATORY

I have a well equipped x-ray laboratory, rooms 214-218 American National Bank Building, corner Fifth and Cedar streets, and am prepared to do your radiographic or Roentgen-ray therapeutic work.—W. S. Fullerton, M. D., St. Paul, Minn.

PHYSICIANS' ATTENTION.—Drug-stores on easy payments, etc. Drug-store positions, United States or Canada. F. V. Kniest, Omaha, Nebr.

An ovarian cyst with a long pedicle may be found in any part of the abdominal cavity. They rarely give pain unless the pedicle becomes twisted. In such a case, a differential diagnosis between it and a hydronephrosis is very difficult. One may suspect the true condition by the movability of the tumor.—American Journal of Surgery.

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Under ordinary circumstances, and when the object of its administration is to promote the digestive function, it should be taken after meals.

When the object is to arrest vomiting of pregnancy, it should be given before meals, in doses of 10 to 20 grains.

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ACTINOMYCOSIS, WITH REPORT OF A CASE OF THE CERVICOFACIAL TYPE*

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OWATONNA, MINN.

Actinomycosis is an infective process characterized by the presence in the tissues of a parasite of probable vegetable or fungous origin, occupying in the opinion of bacteriologists a position midway between the moulds and bacteria, and exciting a chronic inflammation in the affected parts.

History.—In 1877 F. Bollinger, a German veterinarian, recognized the parasitic nature of certain tumors of the jaw in cattle, which hitherto had been classified as osteosarcomas. He found in these growths a peculiar fungus with a characteristic shape, for which Harz, another observer, coined the expressive term *actinomyces bovis*.

Before Bollinger's discovery two Italian investigators, Perrencito and Rivolda, had found certain peculiar bodies in the osteosarcomas of cattle (1866-1873). The results of their investigations, however, were fragmentary and incomplete and failed to place on a secure basis the relation between the germ and the growth in which it was found. This, indeed, had been done as early as 1845 by Langenbeck, who described a case of vertebral caries, the pus from which showed the characteristic granules of the ray-fungus, which he was then, however, unable to properly interpret. Lebert (1857) also gave a description of the granules in a case observed by him.

Israel of Berlin is entitled to the credit of

first determining the relationship between the ray-fungus and its manifestation in the human subject, which was done by him in 1878, and his observations were confirmed the following year by Ponfick of Breslau. J. B. Murphy, of Chicago, reported the first case in man in this country, the disease having been previously identified with the so-called "lumpy-jaw" in cattle by W. T. Belfield.

The disease is encountered with increasing frequency from year to year, due not so much to an increased prevalence as to an increased knowledge of its behavior and to more careful diagnostic work. The sources of infection are at present in dispute, some observers believing its normal habitat to be grains of various kinds, others producing proof tending to show that its range includes the cereals and grasses of many varieties.

Wright, of London, who has devoted a great deal of study to the micro-organisms of actinomycosis, believes that the ray-fungus is a normal inhabitant of the secretions of the mouth and gastro-intestinal tract, in both men and animals, and "that the part played by foreign bodies so frequently found in actinomycotic lesions is not that of the carrier of the micro-organism into the tissues, but that the foreign body by its traumatic and irritant effect furnishes a nidus for the lodgment of the ray-fungus in the tissues," which enters therein with the secretions from the buccal cavity and intestinal tract, develops into characteris-

*Read before the Southern Minnesota Medical Association, August 6, 1908.

tic colonies, and produces lesions which we call actinomycosis. Upon one point, however, all observers are practically agreed, viz., that there is no evidence showing direct transmission of the disease from animals to man, nor is there danger in using the flesh of animals affected with the ray-fungus.

Morphologically, the organisms appear to the naked eye as growths about the size of a millet seed, yellowish in tinge and of some consistency. Under the microscope these sulphur-colored bodies, or granules, resolve themselves into clusters of branching threads and clubbed prolongations radiating from a mass of tangled mycelium. When fairly regular in outline these prolongations often resemble a sunflower in appearance, and are responsible for the expressive term first applied to the growth. The infection may gain entrance to the body through the medium of the digestive tube or the air-passages, or extend directly from the mouth cavity to the adjacent structures.

Where a lodgment of the fungus is made in any of the great cavities of the body the condition at first, and for a variable time, does not admit of an accurate diagnosis. The thoracic form of the disease has, as its salient points, fever, cough, chills and sweating, and progressive emaciation, but as these are all common to various other septic conditions of the chest-organs, their successful differentiation is ordinarily impossible at first, and, indeed, "it would be difficult at any time," says Babes, "to distinguish the disease here from tuberculosis were it not for the presence in the sputum of the characteristic yellow granules." Continuous destruction of lung-tissue occurs, and if the fatal result be sufficiently delayed progressive involvement of all overlying and adjacent structures inevitably occurs, with resulting secondary infection of the pleuræ, pericardium, and mediastinum.

While metastasis is said to occur in all forms of the infection, dissemination is never through the medium of the lymphatics, their complete exception from involvement in the presence of an overlying focus constituting at once a very striking and singular fact and an important diagnostic aid.

Even more confusing are the cases occurring in some portion of the digestive tract. Here, however, there are said to be earlier and more constant evidences of a tumor, which gradually approaches the surface and ultimately breaks down into a suppurating mass. The

gastro-intestinal form is most apt to occur in some portion of the cecum, being indeed frequently regarded as of appendiceal origin, and is relatively infrequent in the stomach-walls.

When occurring in the ileocecal region the actinomycotic tumor closely resembles the condition produced by tuberculosis of the same tissues, and both are most frequently mistaken for carcinoma before the occurrence of suppuration, carrying with it the distinctive infection and clearing up the diagnosis.

The prognosis in cases occurring in the closed cavities of the body is gloomy, more than two-thirds dying and a large percentage of those reported as cured eventually relapsing. Extensive excision of affected areas, with sacrifice of possibly important structures, seems to be the only method worthy of confidence from the surgical standpoint, and the inability to successfully accomplish this in all cases, because of anatomical difficulties, handicaps the surgeon and adds to the intrinsically high mortality.

Fortunately, the disease occurs with the greatest frequency in the tissues of the face and neck, the so-called cervicofacial form, and here it is easily accessible and correspondingly amenable to treatment. When occurring in this region it is the result of an infection extending from the buccal cavity, and first manifests itself as an exceedingly hard, moderately tender swelling located at the angle of the jaw, which slowly increases in size until it has attained a circumference of several inches, and which is accompanied by a moderate amount of pain and a marked degree of trismus, the latter being noticeable and constant, from the inception of the disease. The gradual extension of the infection produces infiltration of the face muscles to such an extent that in the course of a few weeks the patient finds himself unable to open the mouth sufficiently for mastication or for the inspection of the cavity, and is, perforce, obliged to resort to an absolutely liquid diet.

Externally the skin is of a dusky-red color, deepening into a violaceous hue around the numerous points of suppuration with which the inflamed area is seen to be studded.

When one of these fluctuating points is opened by the surgeon the amount of pus liberated is noticed to be small in amount and to lie on top of the indurated mass beneath, which does not appear to undergo any softening. If no further interference is attempted the open-

ings thus made tend to close promptly, but where more active measures are adopted, such as injections of caustic or irritating substances or curetting of tissue, the mouths of these foci remain open and depressed, producing crater-like excavations in the underlying mass. The infection may attack the jaw-bone, producing extensive loss of substance; and all of the teeth on the corresponding side of the face may be thus sacrificed. Where the disease spreads to the upper jaw, as it is said to do in a fair percentage of cases, the risk of involvement of the bones of the skull is greater, and the dangers of meningeal involvement very imminent.

The following is the history of a case recently observed by the writer:

F. L., aged 55, of previous good health; by occupation, an officer of a state institution, and with no history of disease, specific or otherwise, except a benign pyloric obstruction, for which a gastro-enterostomy was done three years ago, first noticed an ill-defined lump or swelling at the angle of the right jaw about August 10, 1907. Thinking that this was caused by the irritation from a tooth which had required crowning a number of years ago he consulted his dentist, who promptly removed the second and third right lower molars, considering them to be at fault.

Contrary to expectation, however, the swelling showed a decided tendency to increase rather than to subside, and my attention as the regular family attendant of the patient was called to the matter about ten days later. Examination showed the swelling at this time to be the size of a hen's egg, fairly well defined in outline, dense, and non-fluctuating, and moderately tender upon pressure. It was thought that we had to do with an alveolar abscess of indolent type, and the usual measures employed to hasten suppuration were instituted and continued with persistency until it became apparent that we were dealing with something radically different. The swelling of the face gradually increased in size, involving the tissues of the neck below the angle of the jaw and extending upwards and inwards to the mouth and orbit. The skin overlying the affected region was deep-red in color, in places almost purplish, while the underlying tissue was dense and unyielding and of a peculiar board-like hardness.

From the onset of the disease a marked condition of trismus was present, the patient be-

ing unable to open his mouth sufficiently wide for mastication or for the inspection of his teeth and gums. A peculiar feature of this condition was its earlier appearance than the extent of tissue involved seemed to warrant.

The condition as outlined above continued with little or no change for several weeks, when there gradually appeared in the dense and intensely discolored swelling unmistakable signs of fluctuation at one or two points; and a slight incision released a small amount of brownish pus from each focus without diminishing in the least the original swelling.

Other points of softening now occurred at brief intervals until in a short time the entire cheek was honeycombed with cryptiform openings, from each of which a small amount of pus could be pressed, having scattered through it at first only some yellow, seed-like bodies.

The appearance of the face at this time resembled very closely that of an immense carbuncle. There was the same marked induration extending, however, further into sound areas than is usually seen in phlegmons. The same small discrete points of suppuration grouped around what promised to become later an immense slough, and the same flat, table-like elevation of the inflamed surface. The distinctive points of difference were the moderate degree of pain and tenderness as compared with carbuncular inflammations, and the constant normal temperature, which latter condition continued throughout the entire course of the disease, showing the absence of infection by pyogenic organisms.

The involvement of fresh areas of tissue, while on the whole steadily progressive, was characterized by well-defined intermissions during which there was more or less pronounced fading of the surface and lessening of the edematous border-line of invasion. Extension when it occurred was symmetrical and concentric in outline, and continued in spite of all efforts to check it until the orbit, temporal region, and nasal border became implicated. Fortunately, the deep tissues of the orbit escaped in a measure, such points of suppuration as occurred being from the margins of the lids, swelling of which was very extreme, the eye being occluded at intervals for several weeks.

The ray-fungus was found, as has been already stated, only in the first discharges from the various foci, and in a fair proportion of these was never observed. Its appearance

coincided with fresh exacerbations of the infective process, and, strange to say, the route of discharge was often through one or other of the original sinuses, rather than a freshly suppurating center. It was never seen in the pus after the first few days of a fresh outburst, and whenever observed with the naked eye the colonies were sparse rather than numerous, hence it can readily be seen that the detection of the actinomyces is at times difficult, if not impossible, contrary to some authorities, and that a diagnosis based upon the microscopical findings alone is apt to be misleading.

The difficulty experienced by other observers in isolating the fungus has been commented on by A. D. Bevan, who says (*Annals of Surgery*, May, 1905): "The diagnosis of the lesion must be made absolute by the finding under the microscope of the typical pictures of ray-fungus colonies or threads either in the pus or the granulation-tissue. It is sometimes very difficult to do this, and a fairly satisfactory clinical diagnosis can be made from the history of the process, more or less chronic, the granulation tissue, the suppuration, and the presence in the pus and tissues of the so-called sulphur-grain bodies, etc."

There was no ulceration of the skin at any point, the sinuses showing, on the contrary, a strong disposition to cicatrize after the first few days of discharge, and to finally become depressed considerably below the surrounding skin-border. No characteristic odor of the fungus, such as has been noticed in other instances, was observed at any time.

Treatment.—Early in the course of the disease, when it became apparent that the condition was not due to an abscess, a careful consideration of the situation, having regard to the symptom-complex, the locality of the disease, etc., led to a tentative diagnosis of actinomycosis, and the patient at once began taking potassium iodide, in doses of 30 grains daily, which was rapidly increased to 75 and 90 grains, this amount being taken throughout the entire course of the disease.

Externally the parts were protected by a 40 per cent ichthyol ointment for no better reason, so far as I am aware, than that it happens to be a favorite application of mine in phlegmonous inflammations. The suppurating foci after evacuation were at first curetted rather freely, and the resulting sinuses swabbed out with a saturated solution of potassium iodide, and in some cases even 95 per cent carbolic acid was freely applied.

No effect upon the disease process was observed from the use of these agents, while afterwards considerable improvement seemed to result from the use of a 10 per cent mixture of formaldehyde in glycerine, with which the sinuses and discharging points were freely swabbed. Marked lessening in the amount of pus followed its application, and such areas as were reached by it showed earlier evidences of beginning repair than were obtained by the use of any of the other measures employed.

The steadily persistent extension upward of the infective area, in spite of all efforts to check it, was a constant source of much anxiety, because of the more or less imminent danger of meningeal involvement. Proceeding on the theory that if an iodine compound could exert any influence at all when administered internally its local application should be at least equally efficacious, a circumvallary line of tincture of iodine was finally applied to the advancing border of infection and renewed daily.

Whatever may have been the actual inhibitory effect of this procedure it is at least a significant fact that at no time did the infection pass beyond the barrier thus established. As soon as the condition of the patient permitted, he was given, in addition to the above, the benefit of x-ray treatment, daily seances being held with exposures of eight minutes' duration.

Bevan and Haines conducted some experiments (*Annals of Surgery*, May, 1905,) with potassium iodide, which convinced them that in cases reasonably well saturated with the drug nascent iodine was liberated in large amounts in the presence of the x-ray, and they offer this as a reason for combining these agents in the treatment of not only actinomycosis, but of blastomycosis as well. I had no means of verifying their theory, but can testify that improvement followed promptly the adoption of this procedure, although it is to be noted that the disease was apparently subsiding when the x-ray treatment was instituted. The duration of the disease in this case was six months and the patient is at this writing, six months after recovery, in his usual condition of good health.

To formulate conclusions from the observation of a single case is manifestly absurd, yet I may be pardoned if I record one or two impressions gained during its progress.

First, I must say that I am rather skeptical as to the good accomplished by the use of the iodide of potassium. The free and uninterrupted discharge of the ray-fungus colonies, with the

lessening chances of reinfection therefrom, seems to me to offer a more reasonable explanation for the improvement noted in cases situated outside the cavities of the body than does the administration of any remedy internally, while the high mortality seen in those cases occurring internally points to a retention of the infective material with a consequent extension of the disease-process.

Last, I believe that the only effect obtained from too active measures employed to eliminate

the disease, such as the curetting of sinuses, excision of granulation-tissue, and the like, is to carry the infection still deeper and wider, prolonging its life and activity, and rendering more likely the occurrence of pyemic involvement. The only external evidences of the disease remaining in this case are the two or three depressed and adherent scars, which still disfigure the face, mute witnesses of my ill-advised efforts to forcibly eradicate the infection.

SOME POINTS IN THE PHYSICAL EXAMINATION*

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It is my object to review certain procedures connected with the making of a general physical examination—procedures which, though simple, seem to be more important than striving for fine clinical data of questionable value. The old saying that more mistakes are made in diagnosis on account of a lack of observation than on account of a lack of knowledge, still seems to hold; consequently the points to which I wish to call your attention are not new, and the real plea should be for complete examinations by at least all of the simple and direct methods at our disposal.

First, as to the making of rectal observations. We seem to have a real antipathy toward putting the finger into the rectum, and yet we all acknowledge that no examination is complete without doing so. The sad cases of carcinoma which have been treated over a period of months for piles, simply on surmise, are more numerous than we would suppose, while the intelligence of the patient and the real ability of the doctor seem to cut little figure.

Generally it is possible to satisfy one's self by the digital examination or by a careful questioning as to the character and frequency of the stools. When this information is not conclusive a glass jar with tightly fitting top may be provided in which a sample can be brought for gross inspection. If this seem to indicate blood coming from a part higher up than the anal region a proctoscopic examination, after a laxative has been given, can be more easily made than many of the

finer chemical tests upon which time is often wasted in every practitioner's laboratory. Rarely will the case appear which requires the more difficult sigmoidoscopic examination of the expert. The use of the proctoscope, like that of the ophthalmoscope, will yield more definite and fruitful results in the hands of general practitioners than many more widely exploited diagnostic methods. Unlike the cystoscopic examination, it requires little of the skill that is difficult of attainment.

The above discussion leads us directly to the much-neglected study of the diarrheas and bloody dysenteries. In these conditions inspection of the lower bowel will reveal either a diffuse inflammation, ulceration, or a normal mucosa. Although it is impossible to arrive at definite conclusions in many instances as to the causative agent even with all the practical methods at our disposal, nevertheless, I fear we are neglecting to study the feces as we should. The man who can examine sputum without nausea can surely study the feces; moreover, one acquires a certain immunity toward noxious odors and disturbing sights. A saline can be given and a watery stool obtained. This insures the best specimen in a search for parasites and is the method employed in Manila. The specimen should be obtained by means of the rectal tube or the stool passed in the physician's office and examined while yet warm. It has been possible in this way for me to recognize two cases of amebic dysentery during the last year which have come from towns in Minnesota. There is no doubt that a few of our chronic dysenteries are amebic. Much more common, of course, is the watery or bloody tuberculous diarrhea, and it

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should be emphasized that many tuberculous diarrheas are watery. The saline purge will often bring down tubercle bacilli, and these can be found in an ordinary smear. It is surely worth while to employ these means of investigating the stool though half of our cases of diarrhea and dysentery still remain unidentified. Most of the unidentified will be in reality pyogenic, diffuse, or granular forms of colitis, many of them due to the colon bacillus; others will be nervous in origin.

In cases of suspected pancreatic disease, bacon can be fed and the excessive amount of undigested fat looked for in the stool.

The making of a pelvic examination in girls up to the age of twenty by way of the vagina is often impossible on account of the unruptured hymen, and even when possible is unsatisfactory on account of the muscular rigidity attendant upon nervousness, and yet a pelvic examination is necessary before arriving at a positive diagnosis of any abdominal condition. In these cases examination bimanually per rectum is by far the easiest and most satisfactory method. It may at first be difficult to interpret the findings, but with some experience the cervix can be located, the position of the uterus ascertained, its movableness tested, and the presence of any tumor made out. Occasionally a girl of fourteen to sixteen comes to us with a diagnosis of chronic appendicitis. The history may be typical, and no positive abdominal sign of tumor can be detected, but upon pelvic examination per rectum an ovarian tumor is found, and at operation the appendix is normal. This has happened with a tumor even on the left side. It may be objected that permission for such examination may not be given, but if one proceeds in a business-like manner to whatever examination he desires to make there is usually no difficulty. Not many years ago the woman who would submit easily to a pelvic examination was considered immodest. Fortunately, this is no longer the case, and even in young girls such an attitude is at present considered false modesty. In fact, more complaint is likely to be made on account of incomplete examination than otherwise.

Another point in connection with rectal examination is the great importance of the bimanual method in men, the patient being placed upon the back with the legs drawn up. Masses can be discovered or more accurately outlined in this way, and as far as I have been able to observe in different clinics it is not frequently used. A boy of 22 came with a history of injury to the

right inguinal region six weeks previously, followed by an attack of fever, which was considered typhoid, and later by rather colicky pains, more on the right side, so that a diagnosis of chronic appendicitis had been made. Upon rectal examination, however, in the above position a mass was found in the pelvis which seemed to be attached to the pelvic bones. It felt rather like sarcoma or old inflammatory tissue. The x-ray was negative, and the mass gradually disappeared of itself without operation or treatment. It had undoubtedly been an infected hematoma caused by the injury, and pelvic examination saved us from the mistake of operating.

A man of 45 came with a history of pain low in the abdomen, more on the left side. There had been no obstructive attacks and no passage of macroscopic blood by stool although there had been some diarrhea. A sigmoidoscopic examination revealed only some injection of the bowel high up. No tumor was palpable abdominally, but there was some suggestion of resistance. There had been little loss of weight. Upon pelvic examination bimanually, however, a mass the size of a hen's egg could be most clearly outlined, while by the usual method with the patient upon his knees nothing could be felt. A diagnosis of probable carcinoma of the sigmoid high up was made and at operation this was confirmed.

It is chiefly in such cases as these where abdominal findings are not altogether satisfactory that pelvic examination in men yields most valuable information, and it is surely more reasonable to develop the habit of following such easy methods in diagnosis than to make elaborate tests to the possible exclusion of certain direct observations.

Dr. Richard Cabot, of Boston, advocates the examination of the abdomen with the patient in a warm bath. This relaxes the abdominal muscles thereby permitting the detection of tumors, especially in those cases of extreme abdominal sensitiveness and rigidity. The method is most practicable in private practice when a tub can be obtained. A single trial will convince one of the amazing ease with which palpation can be carried out. It is quite likely that some of our doubtful cases of carcinoma of the stomach can be positively diagnosed by the simple palpation of a tumor in this way.

A purge should be given to stout people and to all patients whose bowels have not moved freely. This is a necessity in abdominal and pelvic cases before a final conclusion is reached

if the condition be at all indefinite. The cleaning out of the bowels renders palpation easier and the findings more clearly ascertainable; indeed, in certain instances it will clear away what had formerly been considered a pelvic tumor.

Routine testing of the reflexes, more particularly of the knee-jerks, is worthy of insistence. This can be done without fail if one have a systematic way of going about his examination, and in most cases requires merely a tap with the edge of the hand.

Gastric crises are frequently overlooked in the diagnosis of abdominal conditions, and we all know of many cases of locomotor ataxia that have been operated upon. Ulcer had been suspected, but probably an innocent appendix was removed. Crises, when they come repeatedly and at irregular intervals, laying the patient up in bed and causing the vomiting of all food taken, may easily be mistaken for ulcer if we have not obeyed the law of complete observation by testing the knee-jerks and pupils and looking at the eye-grounds. The ophthalmoscope is not frequently needed by the general diagnostician, but its importance is of such positive value that it is indispensable to him.

It is of course a simple matter to examine the breasts of all cases, even though they come for some remote trouble, and this examination will be most productive in a prophylactic way. In a month I have found four unsuspected tumors of the breast, one of which upon pathological examination was found to be carcinoma. At the present time when we know that almost every breast-tumor should be removed on suspicion, and when the results after early operation are so uniformly good this evidence becomes most important. With us in every case the breasts are examined because we consider that some of the most effective work of a physician can be accomplished by finding the disorder which the patient neither complains of nor suspects. In this way a system of prophylaxis may be established, and it is our duty to ferret out the prospective, as well as the imminent, danger if we undertake the care of a case.

Appendicitis is such a common disease that one must guard against its diagnosis without sufficient inquiry into urinary symptoms and without a sufficiently careful examination of the urine. The urinary tests can be directed mainly toward the search for blood, and the surgeon can be assisted by a history of any urinary findings which may lead him to desire a cystoscopic or x-ray examination before operation. The num-

ber of cases in which the appendix has been removed and in which ureteral or kidney-stone is later found, continues to be larger than it ought to be. Likewise intermittent hydronephrosis must not be forgotten, and the radiation of the pain inquired into. These cases have frequently had the gall-bladder drained or the appendix removed before the real lesion has been discovered.

Passing now to a more strictly medical disease, I know of no more difficult task than finding the fundamental cause of some of the severe anemias of the secondary type. Anemias due to nephritis or malignant disease or hemorrhage are comparatively simple, but there remains a group of cases which one cannot place without the pernicious anemias and in which the cause remains obscure. These are thought to be due to septic conditions in some part of the body, and in their treatment I wish to emphasize the importance of nasal inspection. An antrum full of pus or a frontal sinusitis is sufficient to keep the blood in an impoverished condition, and the part played by these nasal affections is not generally recognized. We have had many cases in which the hemoglobin was below 50 per cent that have had no recurrence of their anemia after proper nasal drainage. There is an element of truth in the poisoning of the system by "catarrhs" which our quack medicine venders so delight in explaining in detail.

In concluding this ill-jointed paper let me reiterate the importance of never neglecting any of the direct and simple methods and the importance of forming the habit of making complete examinations; the necessity of rectal observations and a more spontaneous interest in the feces; the value of the bimanual method of examining the pelvis in men and the pelvic examination per rectum in girls; the need of finding the septic focus in our cases of anemia, and recognizing the signs of disease of the nervous system in what are, at first sight, abdominal disorders when symptoms may least point the way; and, last, to develop a system of prophylaxis in regard to cancer of the breast by allowing no breast-tumor to escape our observation. All this to the end that we may avoid later embarrassment and develop a more exacting medical conscience.

A retropharyngeal or peritonsillar swelling that is very edematous will often disappear under the administration of large doses of aspirin.—*American Journal of Surgery.*

SHOCK AND ITS TREATMENT*

By C. S. BIGELOW, M. D.

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That the conditions met with in shock, brought about as they are by such a variety of causes, ranging from purely mental impressions to the severest mechanical injuries, are of nearly daily occurrence in the experience of most physicians, appears to me to be a sufficient excuse for calling attention to the management of cases of this nature. Owing to an inadequate knowledge of the pathology of shock, its treatment in general practice remains more largely empirical than our present-day knowledge of the conditions present, and the therapeutic requirements seem to justify. It is not my purpose to occupy your valuable time in enumerating and describing the predisposing causes, nor, except incidentally, the exciting causes.

Shock is defined as a general depression of the vital functions, due to lowered blood-pressure, brought on by inactivity of the vasomotor centers, and occasioned by a considerable loss of blood, the accumulation of blood in the large abdominal venous trunks, or contusion of the sensory nerves. Collapse is caused by a sudden loss of blood-pressure, due to paralysis of the vasomotor centers. Hemorrhage and cholera cause collapse by the sudden withdrawal of the circulating fluid. The phenomena in either case are mostly due to the same cause, and, for all practical purposes of diagnosis and treatment, the conditions are the same.

J. D. Malcom, in the *London Lancet* for August 26, 1905, says that it is a mistake to suppose that a fall of blood-pressure indicates absolutely that the vessels are dilated. On the contrary, a contraction of an individual blood-vessel always reduces the blood-pressure within that vessel, and the effect on the other parts of the vascular system is not invariably the same.

Shock is of nervous origin, and injury to a nerve causes contraction of the arterioles throughout the body. If the irritation is sufficiently severe and persistent, the contraction tends to increase and to extend to larger vessels, and the blood is forced into the central warmer parts of the body, the vessels of which relax, probably on account of the physiological necessity of conservation of heat. The veins of the internal parts are possibly enlarged more than the arteries, and there is an increased pressure

in the portal system; but there is no loss of tone in any part of the vascular system.

If the vessels in the splanchnic or other large area lose their tone, death must follow, as from hemorrhage. During these processes the blood must be subject to pressure; and the blood plasma is forced out of the vessels into the tissues, thus raising the specific gravity of the blood.

The causes of shock may be divided into two main classes: the effect of injury, or operation, on the important nerve-paths of the body; and the effects of exposure and injury of the abdominal viscera. The main nerve-paths have a depressor nerve, which, when stimulated, lowers the blood-pressure. They have also a pressor nerve, which, when stimulated, raises the blood-pressure.

In case of shock, the following sequence of events tends to take place: There is, at first, a tendency to lower the blood-pressure; the vasomotor centers establish the former tension, or it may, for a time, be increased. However, there may come a time when the vasomotor centers fail to keep up the blood-pressure, and the heart is called upon, through the cardio-accelerator center, for an increased speed; and, in time, this is also exhausted and fails to keep up the proper pressure; the blood remains a bright red; metabolism ceases, which, in time, increases the vasomotor exhaustion, and the end is very soon reached; the heat of the body is dissipated and not reproduced.

Shock may present itself in forms varying in intensity from slight depression to profound collapse. The effect depends upon the origin, intensity, and continuation of the exciting cause. The acute, dangerous symptoms are due to lessened blood-pressure, which empties the arteries producing anemia of the brain and other nerve centers. The immediate indications for treatment are to employ every available means at our command to restore the blood-pressure, allay the nervous excitement, and maintain the body temperature. Cold lowers the blood-pressure by inhibiting the pressor nerve. Irritating or cutting the skin and dilating the sphincter or os uteri increases blood-pressure. Burns of the second and third degrees cause more shock than those of the fourth and fifth degrees, because in the latter the terminal filaments are entirely destroyed and the means of registering the condi-

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tion of the tissues are lost. From this fact it is evident that to prevent shock is to prevent the transmission of impulse to and from the nerve centers.

The injection of a solution of cocaine or eucaine in sufficient quantity into the nerve supplying the field of operation or injury, by cutting off afferent impulses from reaching the vasomotor centers would prevent shock, so far as it concerns the manipulation of the parts involved; and so far as it may have to do with the relief of pain it is a valuable factor in preventing or controlling psychic influences. Morphine lessens the excitement of receiving these impressions, and should be used both before and after operations. Chloroform lowers blood-pressure, while ether increases and maintains it. Hence this is the anesthetic of choice when shock is to be anticipated, both in operations and in confinement. It has been demonstrated that ergot, when injected into the circulation, causes a primary fall of arterial pressure, which is followed by a rise. This rise is due to a stimulation of the vasomotor centers, but the fall is caused by the direct depressant effect upon the heart-muscle, resulting from the direct contact of the drug en masse with the heart. If the dose is very large, there is never recovery from the fall of the blood-pressure, and progressive paralysis of the vasomotor apparatus and heart occurs; but, when given by the stomach or hypodermically in medicinal doses, it causes a rise of arterial pressure, probably by an action on the vasomotor centers and muscular coats of the blood-vessels.

Adrenalin raises the blood-pressure by its action on the vessels themselves, while not modifying the vasomotor centers. Its effect is fleeting, becoming inert on oxidation. The administration of 10 or 15 c. c. of a 1-1000 solution of adrenalin chloride in 500 c. c. normal salt solution, given subcutaneously, and its action supported by diffusible stimulants and strychnia, may be sufficient to tide over a fair percentage of cases. The use of cardiac stimulants, especially in repeated or massive doses, is more than questionable. Crile quotes Mummery as stating the more advanced position in regard to the use of strychnia as follows: "The administration of strychnia in shock is like beating a dying horse—it may call forth an effort, if we beat hard enough; but it hastens the end." There are few drugs that have much value in the support of blood-pressure in the case of true shock. The mechanical means are the head-down posture, inviting the blood to the brain, heart, and lungs;

bandaging the extremities; abdominal pressure; saline infusion; the application of heat; and, in extremis, rhythmic pressure over the heart with artificial respiration. The extremities and the abdomen should be heavily enveloped in elastic, non-absorbent cotton, and firmly bandaged with a broad flannel bandage up to the margin of the thorax; and firm abdominal pressure made with the hand aided by an abdominal binding. There are four principal ways by which fluids may be introduced into the circulation: first, by intravenous infusion; second, by intra-abdominal infusion; third, by rectal injection; and fourth, by subcutaneous infusion. The solution should be several degrees above normal blood-temperature, about 102 degrees, thus allowing for cooling, as it passes through the tube. In collapse, due to hemorrhage, in the absence of shock, intravenous infusion is markedly efficacious. The establishment of an artificial peripheral resistance by the application of external pneumatic pressure, as in Crile's pneumatic suit, affords an absolutely certain method of maintaining the blood-pressure, and, though not at present an available method, should some day prove of great value.

When shock is anticipated from any cause, a quart of normal salt solution should be introduced into the rectum, and ergot administered hypodermically. The skin of the patient should be kept as warm and dry as possible. The head should be lowered or the foot of the bed raised about a foot, the fears of the patient allayed, and all perturbing measures avoided as much as possible. If shock is already present, or has taken place in spite of the measures adopted to prevent it, the body heat should be maintained, the extremities bandaged, and pressure made and kept up over the abdomen. One-sixteenth grain doses of morphine should be injected every one or two hours with the ergot, and normal salt solution every one-and-a-half hours. If adrenalin solution be given at all, it should be administered continually and very slowly in the proportion of 1 to 40,000 normal salt solution. In giving the physiological salt solution, Crile has shown that, after about one pint has been given to each one hundred pounds of body weight, the fluid will leave the vessels as quickly as given. In ordinary cases it is best given by the rectum and very slowly through a small catheter, as suggested by Murphy. Of course, in severe hemorrhage or when the blood-pressure remains low in bad cases of shock, it should, if practicable, be used promptly intravenously with adrenalin in the proportion of 1 to 20,000 and at the rate of

three to five c. c. per minute. The intravenous infusion should be continued until, upon stopping it, the blood-pressure remains at a safe level. In bad cases it may be necessary to continue the infusion for a long period; but it affords a certain method of maintaining the patient's blood-pressure and, therefore, his life.

No stimulants need be given. They increase the work of the heart to an enormous extent and may contribute to death by heart-failure.

When we stop to consider that there is nothing the matter with the heart, and its rapidity is only secondary to low blood-pressure, we can safely infer that alcohol, strychnia, digitalis, and nitroglycerine are either inert or harmful. Crile found that the easiest way to produce shock was by big doses of strychnia, and that the control-dog that received no digitalis lived as long as the one that did.

INDICATIONS FOR HERNIOTOMY IN CHILDREN*

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Operation for the cure of existing inguinal hernia in children, and the reconstruction of the area to prevent recurrence of the condition, are not difficult and should be attended with practically no mortality or future trouble.

It appears that, in all probability, the obliteration of the vaginal process of the peritoneum begins at a point near the external abdominal ring. In case the obliteration does not extend to the internal abdominal ring, there is still a sac remaining which is a congenital defect, and a viscus descending into this sac constitutes a congenital hernia, in spite of the fact that there is no communication with the tunica vaginalis.

No doubt, a very large majority of all inguinal hernias, in children at least, are congenital, and a cure will be brought about only by a complete obliteration of the vaginal process. This can be accomplished in a certain percentage of cases by the rigid and persistent wearing of a truss. Just how many patients are cured in this way is difficult to estimate because some who are all right for a time will suddenly, by an extra effort, force the bowel into the only partially obliterated sac. This may not happen for months or even until the patient reaches adult life, though when it does occur it is often serious, as it is this type of case that so often become strangulated.

In reviewing the histories of 15,000 cases of inguinal hernia in adults, Coley found that about one-third of them had hernia in infancy or childhood. Some writers go so far as to say that all inguinal hernias up to the period of middle life, are congenital, and almost every one is agreed that a typical acquired hernia is a rare condition.

In a series of over 2,000 herniotomies we have operated upon nearly 300 patients who were under twenty years of age, and approximately 100 of these were under five years. There has been no mortality in these cases operated upon, and only two relapses. One relapse came in a boy twelve years old who had a properitoneal hernia. The protrusion showed as soon as he was allowed to be up, and we believe that it came through a part of the sac that was not properly closed at the first operation. The second relapsing case was a boy nine months old with a very large hernial sac containing omentum that could not be reduced before operation. A small piece of this had been jammed with a truss, and was removed, the sac ligated high, and the internal oblique muscle and the conjoined tendon sutured to Poupart's ligament anterior to the cord. The relapse came in nine months, and at the second operation (six months ago) we closed by transplanting the cord.

Feeling that the operation is attended by unusually good results with practically no mortality, and that any other method of treatment, such as wearing a truss, does nothing toward an actual obliteration of the vaginal process, and therefore is not a true cure, we believe that the operation should be performed at a time most suitable for the patient and for the mother. The indication for performing herniotomy in the child or infant with an easily reducible and painless inguinal hernia, is not because of the inconvenience it gives the child, but because of the trouble and anxiety to the child's mother. If away from the child, she worries constantly, fearing that the truss will work loose or the hernia come down; she will feel that the child must be quiet and housed up when he should be out of doors—all this uneasiness and care to the mother in the

*Read before the Southern Minnesota Medical Association, August 6, 1908.

hope that the hernia may heal without operation. Suppose it does heal. There are still many chances that it will open again and at a time much less suitable to have it repaired, and when it will present a much more serious condition.

If the hernia is strangulated it should, of course, be operated upon at once. If it is incarcerated, increasing in size or is a source of pain to the child, there will be nothing gained by waiting, no matter at what age the patient may come for examination. Operating upon the child is not as difficult as operating upon the adult. It is seldom necessary to disturb the cord.

Free the sac from the cord just outside the external ring and continue the dissection downward to the termination and upward to the internal ring by working through the opening of the external ring. The sac should be ligated as high as possible and allowed to drop back. Great care should be taken to avoid the vas deferens, as it is usually very intimately associated with the sac, and in children is frail and easily injured.

Having freed the sac at the external ring it is more convenient to open it at once, in order to introduce a finger to aid in the dissection and preservation of the vas, and also to determine whether the obliteration has separated the peritoneal cavity and the tunica vaginalis. In event there is no evidence of obliteration and the hernial sac and the tunica vaginalis are one and the same process, it is necessary to divide this sac near the neck. Then continue the dissection of the proximal part to the internal ring and ligate, saving the distal portion as a tunica vaginalis. It is better to keep this an open sac as the traumatism of the operation may cause an increase in the amount of fluid, and if the sac

is closed a temporary hydrocele might result. This will be avoided by allowing the tunica to close at will.

Having disposed of the sac the cord is dropped back to its normal position, and in most cases one stitch of chromic catgut approximating the conjoined tendon to Poupart's ligament, will suffice.

In case the internal oblique and conjoined tendon are not well developed, a small incision in the aponeurosis of the external oblique in the region of the internal ring, not opening the external ring, will give room to suture the internal oblique to Poupart's ligament, just saving space for the cord structures to pass through.

The superficial fascia is closed by fine, plain catgut, which is continued through the skin as a subcuticular stitch. The wound is sealed by covering it with a small piece of absorbent cotton saturated with compound tincture of benzoin. Over this a small piece of gauze is held in place by adhesive tape.

The mother is given the ordinary instructions as to diet and laxatives, and is allowed to take the child from the hospital a few hours after he has recovered from the anesthetic. A little paregoric will relieve the pain of the first night, after that he will require nothing more than ordinary care. There are no stitches to be removed, so that in a few days, when the wound is properly healed, the patient may be taken home.

Therefore, the simplest and most satisfactory way of treating inguinal hernias in children, is by operation, and the chief indication for performing herniotomy is the trouble and consequent anxiety to the mother in caring for a child in this condition.

INTRA-UTERINE HEMORRHAGE DURING PREGNANCY AND FROM PREMATURE SEPARATION OF THE NORMALLY IMPLANTED PLACENTA

BY F. L. ADAIR, M. D.

MINNEAPOLIS

This condition has passed under various names, such as "concealed hemorrhage," "partially concealed hemorrhage," "accidental hemorrhage," "ablatio placenta," "partial and complete separation of the normally implanted placenta," etc.

One can select a name to suit. I have used

the above title to emphasize a condition resulting, usually, from a separation of the placenta from the uterine wall at the usual site of attachment.

We hear much about placenta previa, which occurs not oftener than once in 250 labors, and relatively little about the condition under consideration which requires, if anything, greater diag-

*Read before the Minneapolis Medical Club.

nostic ability and fully as great care in the management. According to Holmes it is of clinical importance in one in 500 labors.

In order to give the matter more personal interest I shall cite two cases, the first of pathological interest and the second of extreme clinical importance.

CASE 1.—Mrs. E. S. C., sextipara, came to me on November 16, 1904, with a history of five previous labors, none of which was especially difficult. The last menstruation was April 2—4; life was first felt in August. Physical examination showed the fundus to be two fingers below the xyphoid. Cephalic presentation; back to right; small parts in left upper quadrant. Uterine bruit loudest to left and below navel. Fetal heart to right and above navel. Urine, acid 1018; albumin, 0; sugar, 0; casts, 0.

On December 15th I was called and reached the case about 2:30 p. m. She had been in labor since 9 a. m. The pains were now coming every five or ten minutes. They soon became more frequent (about every three minutes), and of forty seconds duration. The fetal heart could not be heard; uterine bruit, anterior and very loud. At 3 p. m. there was about 1 cm. dilatation; at 6 p. m., about 4 cm. dilatation. The bones of the fetal head were very movable. The anterior fontanelle was in the right anterior quadrant, that is, in the L. O. P. position. The face was delivered anteriorly with the cord around the neck. The placenta was expressed in forty-five minutes, complete. There was an old blood-clot behind one segment, extending to the margin, covering an area about one-fifth of the total where the placenta was darker and more friable. The cord was somewhat discolored, but not short. The baby weighed about eight pounds and was well developed and not macerated. The woman had scrubbed a floor six days previously; had a large company of twelve to dinner four days previously, and had done a washing three days before. She had felt in usual health, but there had been no fetal movement for three days. Recovery of the mother was uneventful.

CASE 2.—Mrs. A. S., aged 30, decipara; previous pregnancies and labors, uneventful except one miscarriage at seven months. I saw the case first about 10:30 a. m., January 22, 1908. The patient gave a history of some bleeding for a couple of weeks. Labor began yesterday, about 6 p. m., since which time hemorrhage has been worse. She now complained of constant pain in the abdomen and back with intermittent, painful contractions of the uterus. The patient was very

pale, with sighing respirations and restless, and was losing some blood through the vagina. The abdomen was greatly distended from a very large uterus, which was tender and rather tense. I could not palpate the fetal parts nor hear the fetal heart. The fetal movements were last felt about 8:30 a. m. Pulse, 134; small and irregular. Cervix was dilated about 4 cm., not effaced completely; membranes, not ruptured; placenta, not palpable in lower segment of uterus. Head presenting L. O. A. Podalic version with delivery of dead child at 11:40 a. m.; placenta delivered spontaneously with child. Large amount of dark blood and clots expelled from the uterus with very little fresh hemorrhage. Mother returned to bed apparently in better condition. Suddenly became worse at 12:50, developed pulmonary edema; gradually respiration ceased; artificial respiration continued till heart stopped beating about 1:15 p. m.

In order to get it before you in a systematic manner I will classify my subject so that the matter will be restricted to its proper sphere.

Hemorrhage may be considered as before or after the termination of the second stage of labor. It is the former we are considering here. Hemorrhage during the first and second stages of labor may result from (a) lacerations of the genital tract; (b) separation of placenta, which may also precede the first stage; (c) a few rare conditions, such as rupture of the circular sinus. There are two varieties of separation of the placenta: (1) in a low implantation; (2) in a normal implantation. It is with the latter that we are concerned now.

Historically, this condition is of interest, as all hemorrhage from the pregnant uterus was ascribed to this cause from the time of Hippocrates until placenta previa was recognized and described by Portal, late in the 17th century, and by Schacher, early in the 18th. The possibility of the occurrence of a hemorrhage of sufficient size within the uterus to be a menace to the mother was debated, pro and con, and H. L. Hodge, in 1864, was rather doubtful as to its occurrence. Goodell, however, collected and published 106 cases in 1870, and his article is a classic.

The frequency of this condition is hard to estimate. As stated above, Goodell collected 106 cases prior to 1870; Holmes, in 1901, published an article based on 200 additional cases. Herzfeld, in 1907, collected 250 cases. Holmes thinks the condition is of pathological significance in about 1 in 200 cases, and of clinical importance

in 1 in 500 cases. Williams thinks it is very rare, as he has seen only three cases. Herzfeld, in a total of 259,456 births, collected from various sources, found 489 cases, or about 1 in 530.

The etiology of the condition is very uncertain, but some facts of importance have been noted. Chantieuil, Winter and Weatherly first called attention to the relation of nephritis to premature detachment of the placenta. Herzfeld, in his collection of 250 cases, found only 59 where urinary findings were recorded. Of these 48 showed nephritis. Von Weiss demonstrated albuminuria in 5 out of his 8 cases. In 5 of 16 cases I have collected, the urinary findings were given, only one of which showed albuminuria. Multiparity has been considered a predisposing factor. Goodell found 12.5 per cent of his cases to be primiparæ. Holmes found 19.2 per cent, while Herzfeld places it at 24.5 per cent. The normal percentage of primiparæ is between 25 and 30 per cent.

Of local causes a physiological condition of blood-stasis has been mentioned. Mechanical forces; external violence, direct and muscular; internal violence from traction on a short or coiled cord from sudden evacuation of the uterus in hydramnios; and the birth of the first of twins, have been held as responsible in many cases.

Of pathological conditions, endometritis, with or without nephritis, is given most credence by many, but definite statistics are hard to find in regard to this. Fetal causes might be considered, as Holmes found an abnormal position in 11.9 per cent of the cases; and Herzfeld, in 11.3 per cent of his 204 cases. Hemorrhagic diathesis was found in one case reported by De Lee. Six of Herzfeld's cases were associated with eclampsia. Pathology has not decided much, but von Weiss first showed the relation between nephritis and endometritis decidua. Schickele found that vascular diseases from nephritis produced the death of the decidual cells and resulting hemorrhage, or *vice versa*. Seitz found primary decidual endometritis in his case and corroborated von Weiss' finding of degenerative changes in the uterine muscle in two cases. Seitz described a second case which died from premature separation of the placenta, associated with eclampsia and hemorrhagic nephritis, in which he found no unusual condition in the decidua or placenta. Fehring reported two cases, one with eclampsia, the other with edema, neither of which showed abnormal changes in the placenta. LeLorier found in a Cæsarean section ecchymoses

in the uterus. Maslowsky ascribed the cause in one case to a gonorrheal endometritis. J. Veit considered deportation of the chorionic villi the explanation of this condition. Other pathological conditions have been described as echinococcus, calcification, and white infarcts.

The symptoms of this condition are very important. The onset may be at any time during pregnancy after the fourth month. Herzfeld compiled the following table:

In the 5th month.....	4 cases
In the 6th month.....	10 cases
In the 7th month.....	23 cases
In the 8th month.....	53 cases
In the 9th month.....	92 cases
During labor	29 cases

It may occur at any age, but 61 per cent were over 30 years of age. It may begin even when the head is deep in the pelvis, as in Reynolds' case. The onset is sudden and may start with pain, with or without vomiting, faintness, or even collapse or perhaps with external hemorrhage, from slight to severe.

Subjective symptoms call for consideration first, and of these pain is of considerable importance. Severe pain was noted in 62 of Herzfeld's 250 cases. It is located usually in the fundus or epigastrium. The character is different from the pains of labor. It is a sensation of tearing and as the uterus becomes distended that of stretching or bursting. If labor pains are present, they become insufficient and give place to those of constant colicky character. In two of 18 cases I have studied, intense pain in the back was a symptom. Vomiting was present in 2 of the 18. Holmes and Herzfeld speak of it as a symptom, but make no mention of its frequency.

With reference to the fetus, extremely active movements are frequently noted, followed by complete cessation. The other subjective symptoms are referable to hemorrhage, and I need not detail them here. The objective symptoms are the constitutional effects of hemorrhage, varying greatly, of course, with the severity.

Abdominal examination may reveal a large distended uterus, which is tender and hard. It may be extremely difficult or impossible to feel the fetus. In some cases an accessory tumor has been described, due to retention of blood behind the placenta or membranes. This may vary in location and consistency, and was noted 22 times in Herzfeld's cases. In regard to hemorrhage, which is the prominent and important symptom, the cases are divided into absolutely and relatively concealed. In the 306 cases of Goodell and

Holmes, it was concealed in 113 cases, but in 65 per cent, or 193 cases, there was external hemorrhage. Herzfeld found 52 concealed in his 250 cases, or 20.8 per cent, as against the 35 per cent of Goodell and Holmes.

The conditions favoring concealment of the hemorrhage are—

1. Absence of labor pains, as it was concealed in only 3 cases of 29 occurring during labor (Herzfeld).
2. Intact amniotic sac, present in the 3 cases mentioned above and in many others.
3. Placenta remaining firmly attached around the hemorrhagic area.
4. Membranes keeping the blood localized.
5. Close apposition of the presenting part.
6. Conglutination of the uterine orifice.

Hemorrhage is more frequently of old blood, and frequently of clots, though it may be fresh. It may occur at any time, and after the birth of the child there is usually an escape of a large amount of old blood and clots, and the placenta usually comes away immediately with the child. There is great liability to post-partum hemorrhage in these cases. Hemorrhage sometimes comes with rupture of the amniotic sac. Four cases have been reported in which the hemorrhage was into the sac. Instead of blood, there may be serum or blood-tinged serum, which is squeezed out from the blood-clots. This sign is, according to Holmes, almost pathognomonic. The serum must not be confused with the amniotic fluid.

Vaginal examination may show the cervix in any condition: the membranes may be intact or not; presentation may be of any kind, but pushing up of the presenting part is apt to be followed by the escape of old blood and clots. The placental margin is not palpable except in the extremely rare cases of prolapse of the placenta. In one case an accessory tumor was felt in the anterior vaginal fornix from accumulated blood.

The diagnosis to be of benefit must be made early. The suggestive points are abdominal pain occurring during the latter half of pregnancy; vomiting; distension of the uterus with tenderness and hardness; excessive fetal movements followed by cessation; difficulty in palpation of the fetal parts; absence of fetal heart-tones; presence of accessory tumor; presence of vaginal hemorrhage or discharge of serum when the placenta cannot be palpated. Any or all of these things, especially when associated with the constitutional symptoms of hemorrhage, should bring

this condition to mind. In differential diagnosis we must consider—

A. Placenta previa, which shows the following differential points:

1. Palpable placenta.
2. Painless hemorrhage, unless in labor.
3. If in labor, hemorrhage comes with pains, while with a detached placenta it occurs between pains.
4. Absence of signs due to accumulation of blood within the uterus.

B. Rupture of uterus.

1. More frequently during labor, usually late.
2. Fetal parts more easily palpable because of the escape into the abdominal cavity.
3. Diminution in the size of the uterus.
4. Rapid cessation of labor.
5. Recession of the presenting part.

C. Extra-uterine pregnancy—advanced. Olivier operated upon a case of premature detachment, considering it a case of ruptured extra-uterine pregnancy. Differential points in this condition are:

1. History of menstrual irregularity early in pregnancy.
2. Presence of free fluid in the abdominal cavity.
3. Absence of external hemorrhage.
4. Absence of signs of distension of the uterus.

D. Syncope.

E. Abdominal colic of various kinds. In the latter determination of hemoglobin and erythrocytes should be of value.

The prognosis is very serious.

The maternal mortality is given as follows: In Goodell's cases, 54 of 106 mothers died, making 50.9 per cent; Holmes gives the mortality as 32.2 per cent, and Herzfeld places it at 29 per cent. The fetal mortality according to the same authors is as follows:

Goodell, 6 of 107 lived, a mortality of 94.4 per cent.

Holmes places the mortality at 85.8 per cent.

Herzfeld, 42 of 246 lived, a mortality of 82.9 per cent.

Comparing absolutely and partially concealed hemorrhages, we find the following maternal mortality:

	Absolutely concealed.	Partially concealed.
Goodell	52 per cent	41.3 per cent
Holmes	23 per cent	34.6 per cent
Herzfeld	40.4 per cent	27.3 per cent

Treatment.—Treatment is of course the ulti-

mate object and of the greatest importance. The prime object is the life of the mother, that of the child being secondary on account of the very high mortality of the latter. The purpose of all treatment in this condition is to secure rapid and safe evacuation of the uterus.

The vaginal tamponade has been frequently used and is the routine treatment in the Dublin Rotunda so long as the membranes are intact. It seems to be a rational procedure when there is considerable external hemorrhage with little evidence of internal bleeding. It would seem to be of special use in those cases where the cervix is not effaced or dilated, and the symptoms are not urgent. The cases, however, should be watched constantly, and at the slightest indication of any aggravation of the symptoms more radical measures should be adopted. Rupture of the membranes has some warm advocates, and others oppose it with equal ardor. It hardly seems rational to rupture the membranes except as an immediate preliminary to some operative interference. De Forin, in 34 cases, found a mortality of 61.7 per cent. Herzfeld, one of 61.5 per cent in 26 cases.

Opening of the uterine outlet may be done by the usual methods and all of them have been used, but circumstances will generally compel the use of manual dilatation. Bossi's dilator was used five times with one maternal and two fetal deaths. Barnes' and de Ribes' bags have been used with good results. However, Fieus prefers manual to any other form of dilatation. Dührssen's incisions and vaginal Cæsarean section were used in a very small number of cases. Kristeller's expression was used four times with one maternal and three fetal deaths by Herzfeld, and in five cases with no mortality by Holmes. Cæsarean section was done four times, twice on living and twice on dead women.

Podalic version was performed 53 times, with the death of 26 women (49 per cent) and 46 babies (87 per cent). Forceps were used in 41 instances, showing a maternal mortality of 53.6 per cent and a fetal mortality of 89.7 per cent. Perforation was done in 18 cases with a mortality of 50 per cent.

The great liability to post-partum hemorrhage makes the management of the third stage an important part of the treatment. In 196 cases the placenta came with the child, accompanied by blood-clots in 33 cases. It came soon after, in 77; with Crede in 36 and by manual removal in 50 cases. Death was due to post-partum hemorrhage in 22 cases, or 32.4 per cent of the

fatal cases. The usual treatment for post-partum hemorrhage is indicated. In one case an ineffectual attempt at hysterectomy was made. The use of ergot or its derivatives, adrenalin, and stimulants with normal saline per rectum and subcutaneously, is often indicated.

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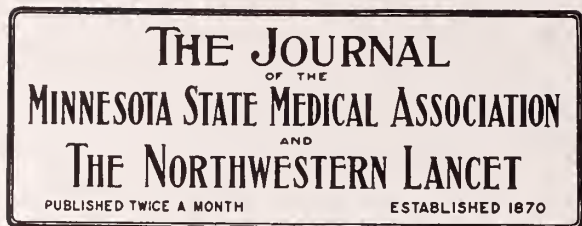
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ANESTHESIA AT ST. LUKE'S HOSPITAL

Robert Abbe, of New York, believes that the question of having trained experts in anesthesia at all hospitals is most important. The idiosyncrasies of the patient and the nature of the anesthetics cannot be taught theoretically. Practical experience of long standing is what is wanted. Safe anesthesia is maintained only when the patient is not given too much. It is the imperative duty of the surgeon to teach the anesthetist. With the use of cocaine and novocain a few whiffs of ether will often give excellent results. The author considers of great importance the entire emptiness of the stomach. Lavage is an excellent precaution.—Medical Record.

THE ADMINISTRATION OF ANESTHETICS AT MT. SINAI HOSPITAL

Howard Lilienthal, of New York, says that an immediate death from ether or chloroform seldom occurs when the anesthetist is expecting it, since then his precautions are sufficient to prevent any accident. The advent of the specialist in anesthesia is to be welcomed. Nitrous oxide gas-ether sequence, and chloroform are the only anesthetics used at Mt. Sinai Hospital. Chloroform when skillfully given has proven satisfactory. In tumors and abscesses about the neck and throat it is especially dangerous. In pulmonary troubles it is especially safe and ether is to be feared. Nitrous oxide is excellent when neither of the other anesthetics can be used.—Medical Record.



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STATISTICAL RECOVERIES FROM TUBERCULOSIS

The information derived from statistics must be discounted by the enthusiasm and love of figures on the part of the one who compiles the records. Statistics must continue to form a part of the work of the world, and in many instances they are invaluable. How much reliance can be placed on their accuracy when they are manipulated for special purposes is a matter for debate. The surgeon who does a large business and performs many operations must depend upon the statistical outcome for his deductions and conclusions. Even here the figures are not wholly reliable on account of the scattered material and the impossibility of following all cases. The same statement may be applied with equal force to the recoveries from tuberculosis. It is necessary, therefore, to sound a note of warning to the enthusiast who claims or expects a large percentage of recoveries from this disease. The impression is gaining ground among the laity that tuberculosis is curable, and no one should discourage the idea. It is a well-known fact that many local tuberculous processes recover or at least subside. Autopsies on persons dying of other

diseases reveal unsuspected foci of tuberculosis.

Another well-known fact is, that many apparent recoveries from tuberculosis relapse: it may be months or years before the disease again becomes active. The patient may, under the best of care and surroundings, find himself as well as ever, but if confronted with fatigue from overstrain, his old tubercular spot may suddenly become lighted up by the release of his encapsuled germs, or perhaps his fatigue renders him more susceptible to new infection. With all of our newer methods in the care of tuberculosis, our camps, sanatoria, and out-of-door living, we have just entered into the practical ways of combating the disease, or, at best, we have just begun an educational campaign that some day will be of benefit to the masses. It is not fair at this time to rush into statistics or to become too much enthused about the cure of the disease.

The early stamping out of tuberculosis is an impossibility, at least it cannot be done for a generation or two. We may prevent its multiplication in some localities, but we cannot wholly prevent or prohibit the carriers of the infection from associating with the individual who harbors a play-ground for the bacilli. The public must understand, therefore, that all of our efforts so far are educational and preparatory, and they must not be disappointed if the State Sanatorium and the various anti-tuberculosis societies do not accomplish everything during the early years of the campaign. The concealed cases, the suspended ones, the crowding of the poor in unsanitary quarters, mean that the work of prevention must be fought over and over before any marked results are obtained and before any statistics, except those of accumulated cases, can be presented for public scrutiny. In the meantime the state should be urged to provide simple quarters for care and treatment, and the public should be continually reminded that charity organizations cannot care for the poor without money. It costs something for tents, nurses, and foods.

THE POLITICAL UPRISING

Election time is approaching, and, as usual, the doctor is striving to get into the political limelight; hence, "the melancholy days have come, the saddest of the year, when the voters vote for water or scream aloud for beer!" It is, nevertheless, refreshing to know that physicians are becoming interested in politics, yet it is amusing to find so many doctors seeking the same office. No physician has the courage in Minnesota to

make the race for governor, but not a few are candidates for the state legislature, the National Congress, Senate and House, will contain a few medical men if the newspaper reports will carry the word. In the State of Minnesota physicians are filing for various major and minor offices. The usual candidate for mayor of Minneapolis has expressed his willingness to serve the people. Not less than four doctors hope to be the nominee for coroner. Is this office such an important and remunerative one that it is worth striving for? It must be attractive, or perhaps it is considered a stepping-stone to something greater. Whatever the motive of the candidates, the physician should not consider a political office beneath his dignity. He should consider his duties as a citizen regardless of his profession. In the past the physician who was in constant search of an office lost his hold in his profession. Many a promising man has ruined his career by his political chase.

Now the times have changed, and as the profession becomes more elevated in its ideals there should be a physician on every important city, county, and state board. The school board of Minneapolis needs a physician, and it is with pleasure that THE JOURNAL-LANCET learns that Dr. Knut Hoegh is willing to have his name presented at the primaries. Should he not be accepted the fault is not his, but lies with the people, and their failure to appreciate the work of an experienced, scholarly man. There are many questions that come before every school board that can be treated only by the advice of the physician, such as school-inspection, medical inspection of pupils, ventilation, and general sanitation. In many school boards in country towns this necessity has been recognized, and it is rare that one member of the board is not a physician.

This year is one of great interest to the professional politician, both in national and state issues. Much depends upon the attitude of the successful party toward the establishment of a national bureau of health. Mr. Taft is reported to be in favor of it, and his interest in our outside possessions shows his appreciation of the worth and work of medical men. We do not recall any statement as to the attitude of Mr. Bryan on this subject.

If each physician would make a house to house canvass while making his daily rounds he would do much to change public opinion and to educate the people to the necessity of having representative physicians on municipal boards.

40th Annual Meeting of the MINNESOTA STATE MEDICAL ASSOCIATION

Old Capitol Building, St. Paul, Minn.

House of Delegates Meets at 2 p. m., Tuesday, October 6th.

The Association Convenes for Scientific Work Wednesday and Thursday, October 7th and 8th at 9 a. m.

Papers must not occupy more than 15 minutes, Discussion not over 5 minutes

Members reading papers must be prepared to leave the manuscript with the Secretary at once

PROGRAM.

WEDNESDAY, OCT. 7th—9 a. m. PROMPTLY.

CLINICAL DEMONSTRATIONS

Members having places on the program must be on hand promptly when their papers or demonstrations are reached, or they must go to the end of the list.

- 1 Tabes Dorsalis, DR. WM. REID, Deerwood
- 2 Hypernephrosis of Kidney—Child 17 years old,
DR. M. K. KNAUF, Two Harbors
- 3 Blue Baby or Congenital Cyanosis,
DR. O. A. OREDSON, Duluth
- 4 Goitre Treated by Injection,
DR. M. A. HATCH, Dundas
- 5 Septic Wounds Involving Joint Surfaces,
DR. O. C. STRICKLER, New Ulm
- 6 Results of Pneumonia, Empyema and Rib Secretion,
DR. E. H. BAILEY, Lake City
- 7 Morbid Anatomy of Heart,
DR. H. A. TOMLINSON, St. Peter
- 8 Transposition of Abdominal and Thoracic Viscera,
DR. F. D. GRAY, Vesta
- 9 Gastrectasis, DR. H. S. STAPLES, Minneapolis
- 10 Pernicious Anemia,
DR. W. H. AURAND, Minneapolis
- 11 Spina Bifida, DR. A. E. HEDBACK, Minneapolis
- 12 Extrophy of the Bladder,
DR. ARTHUR T. MANN, Minneapolis
- 13 Hemiplegia, DR. CHAS. E. INGBERT, Minneapolis

WEDNESDAY, OCT. 7th—1:30 p. m. PROMPTLY

- 1 President's Address, DR. W. H. MAGEE, Duluth
- 2 Papillary Synovitis of Knee Joint,
DR. C. J. RINGNELL, Minneapolis
- 3 Xanthoma Diabeticum,
DR. LESTER W. DAY, Minneapolis
- 4 Anterior Poliomyelitis (Acute),
DR. A. J. FRANZEN, Minneapolis
- 5 Demonstration of Use of Instruments for Tracheo-Bronchoscopy, DR. F. C. TODD, Minneapolis
- 6 Surgical Treatment of Roots of Loosening Teeth,
DR. THOS. B. HARTZELL, Minneapolis
- 7 Aortic Aneurism, DR. J. W. BELL, Minneapolis
- 8 Xeroderma, DR. GEO. D. CRUME, Minneapolis
- 9 Cardio-Spasm with Apparatus for Treatment,
DR. OLIVER R. BRYANT, Minneapolis
- 10 Double Vagina and Cervix with Didelphic Uterus,
DR. W. M. CHOWNING, Minneapolis
- 11 Perineal Prostatectomy—Three Cases,
DR. H. BOUMAN, Minneapolis
- 12 Exophthalmic Goitre,
DR. F. A. DUNSMOOR, Minneapolis

- 13 Radical Operation for Hernia Followed by Ambulatory Treatment,

DR. A. E. BENJAMIN, Minneapolis

- 14 Aneurism of Sub Clavicular Blood Vessels with Destruction of Radial Nerve by Gunshot,

DR. G. SCHWYZER, Minneapolis

- 15 Curvature of Spine—Early and Late Cases,

DR. A. J. GILLETTE, St. Paul

- 16 Huntington's Chorea, DR. E. J. ABBOTT, St. Paul

- 17 Deformities Resulting from Burns,

DR. J. C. WHITACRE, St. Paul

- 18 Tuberculin Treatment of Tubercular Glands of Neck,

DR. M. M. GHENT, St. Paul

- 19 A Common Nervous Disease,

DR. HALDOR SNEVE, St. Paul

- 20 Anatomical Treatment of Fracture of Femur after Method of Maxwell and Ruth,

DR. A. SHIMONEK, St. Paul

THURSDAY, OCT. 8th—9 a. m. PROMPTLY

Members having places on the program must be on hand promptly when their papers or demonstrations are reached, or they must go to the end of the list.

- 1 Emergency Treatment of Certain Eye Injuries,

DR. J. M. ROBINSON, Duluth

- 2 Exophthalmic Goitre,

DR. H. E. PLUMMER, Rochester

- 3 Fractures Through the Anatomical Neck of Humerus, with Dislocation of the Head (Report of two cases),

DR. WALTER COURTNEY, Brainerd

- 4 General Prophylaxis Against Rabies,

DR. F. F. WESBROOK, Minneapolis

- 5 The Laboratory Diagnosis and Treatment of Rabies,

DR. O. MCDANIEL, Minneapolis

- 6 Treatment of the Insane,

DR. S. A. HAMILTON, Minneapolis

- 7 Congenital Idiopathic Dilatation of the Colon or Hirschsprung's Disease,

DR. E. S. JUDD, Rochester

THURSDAY, OCT. 8th—I:30 p. m. PROMPTLY

- 1 Address—The Principles Underlying the Treatment of Acute Intestinal Obstruction,

DR. CHAS. L. SCUDDER, Boston, Mass.

- 2 The Cutting of Cicatricial Strictures of the Esophagus Through the Esophagoscope,

DR. WILHELM LERCHE, St. Paul

- 3 The Simple Atrophy of Infants and Its Relation to Food,

DR. WALTER R. RAMSEY, St. Paul

- 4 Infant Feeding, DR. J. P. SEDGWICK, Minneapolis

- 5 The Practice of Medicine and Surgery as Related to Law,

DR. A. C. SCHMITT, Mankato

- 6 Appendicitis Complicating Pregnancy and the Puerperal State,

DR. L. C. WEEKS, Detroit

- 7 Two Cases of Infection of Skin by the Bacillus Diphtheriae,

DR. E. L. TUOHY, Duluth

- 8 The Diagnosis of Joint Diseases,

DR. ALEX. R. COLVIN, St. Paul

- 9 The Most Recent Trend in the Methods of Handling Smallpox,

DR. H. M. BRACKEN, Minneapolis

On Wednesday evening, Oct. 7th, the Association will be the guests of the Ramsey County Medical Association.

CORRESPONDENCE

MEDICAL EXAMINATION FEES

Minneapolis, September 5, 1908.

TO THE EDITOR:

I am enclosing a copy of the President's letter to medical examiners, bearing upon the policy of this company on the fee question.

As there has been so much agitation in Minnesota and the Dakotas on this subject, and so much misunderstanding among the examiners as to the attitude of insurance companies toward this question, we would appreciate the publication of this letter in the next issue of THE JOURNAL-LANCET.

HENRY WIREMAN COOK, M. D.,

Medical Director.

August 1, 1908.

To the Medical Examiners of the Northwestern National Life Insurance Company:

Gentlemen: Northwestern National examiners, in all cases, are appointed from the home office, and are selected on account of professional ability and integrity.

It is desired to retain permanently the services of men of efficiency and promptness, and that such men should be satisfactorily remunerated for services rendered the company.

A uniform fee of \$3.00 was fixed by the management upon the organization of the company in 1885, and continued until soon after the present management took charge, when the graduated fee was adopted of \$3.00 on applications of \$2,500 or less, and \$5.00 on applications in excess of \$2,500.

Believing that the importance of the medical examination cannot be overestimated in securing a careful selection of risks, and desiring only the most thorough and painstaking work in connection with each examination, regardless of the amount of insurance applied for, it has been determined by our Executive Committee that hereafter a uniform fee of \$5.00 will be paid for all medical examinations.

Bespeaking a continuation of your careful work as an examiner, and your interest in the growth and upbuilding of the company, I am

Very truly yours,

L. K. THOMPSON, President.

CONSTRUCTIVE SURGERY AFTER EXTENSIVE GUNSHOT WOUND OF ABDOMEN

W. M. Polk, of New York, describes the injury received by a patient in the discharge of a double barreled shotgun into the side of the abdomen, and the surgical operations that were necessary to restore the abdominal wall and intestinal structure to a condition that permitted the patient to live a comfortable and active life.—Medical Record.

NEWS ITEMS

Dr. E. S. Fortier, of Little Falls, will locate in Perham.

Dr. John A. Healey has moved from Princeton to Pine City.

Dr. S. D. Sauer, of Virginia, will move to Milwaukee, Wis.

Dr. J. E. Corrigan, of Canton, S. D., has moved to Spooner, Minn.

Drs. Kern & Holdridge, of St. Cloud, have dissolved partnership.

Dr. A. R. Varco, State University, '07, will locate at Sidney, Montana.

Dr. Fred V. Lyman has moved from Beltrami, Minn., to McLean, N. D.

Dr. Charles Bower has purchased the practice of Dr. Joseph Schwartz, of Hartford, S. D.

Drs. C. F. and Frank Brigham, of St. Cloud, who have been doing special work at Chicago, have returned.

Dr. F. N. Hunt, of Blue Earth, has plans drawn for a 12-room building to be used for hospital purposes.

Bowbells, N. D., will build a 12-room house for a home for the nurses employed in the county hospital at that place.

Dr. W. A. Gerrish, of Enderlin, N. D., has moved to Jamestown, N. D., and become associated with Drs. Rankin & Siften.

Dr. F. D. Smith has moved from Oronoco, Minn., to Stratford, S. D., and become associated with Dr. A. L. Pickering, of the latter place.

Dr. L. F. Woodworth, who recently graduated from the Iowa State University, has located at Marshall and become associated with Dr. F. C. Wheat.

Winnipeg entertained in a royal manner the members of the American Public Health Association which held its annual meeting in that city last month.

Dr. F. L. Adair, of Minneapolis, has gone to Europe for special study. He will be absent about six months, and will spend most of his time in Berlin.

Dr. A. G. Alley, of Kilkenny, has sold his practice, and will locate elsewhere. He is now inves-

tigating the typhoid epidemic at Mankato for the State Board of Health.

Work on the building for the Deaconess Hospital at Faribault is rapidly progressing, and the building will be ready for occupancy before the end of the year. It will cost \$55,000.

Minneapolis has a new hospital for the treatment of cases of tuberculosis. It is located at Camden Place. The grounds cost \$8,000 and were the gift of Mr. W. H. Dunwoody.

Dr. Clark F. Tuomy, of St. Peter, has moved to Genesee, Idaho, where he purchased the practice of Dr. Jesse Conant. Dr. Tuomy was connected with the State Hospital for a number of years.

Dr. W. F. Coon, of Elysian, has sold his practice to Dr. Louis Ten Broeck, a graduate of Rush, class of '07. Dr. Coon will do post-graduate work in Chicago for some time, and re-locate probably in Minnesota.

The newspapers of South Dakota are divided in opinion as to the wisdom of establishing a medical course in the university of that state, as has already been done. It is believed by many that the expense will not justify the movement.

Drs. Andrews & Holbrook and Drs. Holman & Curran, of Mankato, have dissolved partnership. In the former firm Dr. Holbrook will be succeeded by Dr. Roy N. Andrews, son of Dr. J. W. Andrews, who graduated in June from the State University.

The Northwestern Hospital of Brainerd, which opened only a month ago, has already a good business. Dr. G. A. Magnusson, State University, '08, is house physician, and Miss Freda Wall, formerly of the Swedish Hospital of Minneapolis, is the matron.

The Southern Minnesota Medical Association has had seventeen presidents in its seventeen years of existence, and of these four are now dead, as follows: Dr. Franklin Staples, of Winona, the first president; Dr. N. S. Tefft, of Plainview; Dr. S. W. Ransom, of Dodge Center; and Dr. J. P. Waste, of Plainview. The list was published on the program of the last meeting of the Association.

A local paper at Madison thus reports a case of the local doctor: "Dr. M. Thrane writes that he will take up his work by Oct. 1st. We might add in parenthesis that he has fully recovered from the consumption, cancer, gall-stones, Keely cure and all the other various complaints which

REPORTED FROM 72 CITIES HAVING A POPULATION OF 1,000 OR UPWARDS
FOR THE MONTH OF JUNE, 1908

CITIES	Population of U. S. Census of 1900	Population of State Census of 1905	Total Deaths	Tuberculosis of Lungs	Other Forms of Tuberculosis	Pneumonia	Bronchitis	Diphtheria	Scarlet Fever	Measles	Smallpox	Whooping Cough	Cerebrospinal Meningitis	Typhoid Fever	Diarrheal Dis-eases of Child-en	Cancer	Puerperal Septicemia
Albert Lea	4,500	5,657	2														
Anoka	3,769	4,053	4														
Austin	5,474	6,489	3		1												
Barnesville	1,326	1,566	5														
Bemidji	2,183	3,800	1			1											
Blue Barth	2,900	3,364	2														
Brainerd	7,524	8,151	2														
Chaska	2,165	2,085															
Chatfield	1,426	1,300															
Cloquet	3,074	6,117	2	1													
Crookston	5,359	6,794	6	1		1		1		1							
Detroit	2,060	2,149	1														
Duluth	52,968	64,942	57	8	1	6		4						1		4	3
E. GrandForks	2,077	2,481															
Ely	3,712	4,045	34														
Eveleth	2,752	5,332	3														
Faribault	7,868	8,279	5										1				1
Fairmont	3,440	2,955	1														
Fergus Falls	6,072	6,692	2														
Granite Falls	1,214	1,340															
Hastings	3,811	3,810	3												1	1	
Hutchinson	2,495	2,489	1														
Jordan	1,270	1,311															
Lake City	2,744	2,877	3												1		
Litchfield	2,280	2,415	2														
Little Falls	5,774	5,856	4												1		
Luverne	2,223	2,272	2														
Le Sueur	1,937	1,842	3	1													
Madison	1,336	1,604	1														
Mankato	10,559	10,996	14	1	1		1									1	
Marshall	2,088	2,243															
Melrose	1,768	2,151	2														
Minneapolis	202,718	261,974	214	24	2	13	1	6	1			2	6	4	3	12	1
Montgomery	979	1,281	1												1		
Montevideo	2,146	2,595	2														
Moorhead	3,730	4,794	6													1	
Morris	1,934	2,003	2						1								
New Prague	1,228	1,419	1														
New Ulm	5,403	5,720	1		1												
Northfield	3,210	3,438	5													1	
Ortonville	1,247	1,612															
Owatonna	5,561	5,651	4														
Pipestone	2,536	2,885	4					1								1	
Red Lake Falls	1,885	1,797	2					1								1	
Red Wing	7,525	8,149	4	1												2	
Redwood Falls	1,661	1,806	1														
Renville	1,075	1,229	3	1													
Rochester	6,843	7,233	19	3		1										2	
Rushford	1,100	1,133	4														
St. Charles	1,304	1,238	2													1	
St. Cloud	8,663	9,422	10	1												1	
St. James	2,607	2,320	1													1	
St. Paul	163,632	197,323	142	11	1	10		3		1					2	18	
St. Peter	4,302	4,514	2	1													
Sauk Centre	4,220	4,463															
Shakopee	2,046	2,069	4			1										1	
Sleepy Eye	2,046	2,312															
So. St. Paul	2,322	3,458															
Stillwater	12,318	12,435	7													1	
Thief River Falls	1,819	3,502	1														
Tower	1,366	1,340	1														
Tracy	1,911	2,015	2														
Virginia	2,962	6,056	56			1		1									
Wabasha	2,528	2,619															
Warren	1,276	1,640															
Waseca	3,103	2,838	6	1		1									1		
Waterville	1,260	1,383	1														
West St. Paul	1,830	2,100															
Willmar	3,409	4,040	1												1		
Windom	1,944	1,884	1														
Winona	19,714	20,334	12	1		1									1		
Worthington	2,386	2,276	1														

REPORTED FROM 65 VILLAGES HAVING A POPULATION OF 1,000 OR UPWARDS
FOR THE MONTH OF JUNE, 1908

VILLAGES	Population of U. S. Census of 1900	Population of State Census of 1905	Total Deaths	Tuberculosis of Lungs	Other Forms of Tuberculosis	Pneumonia	Bronchitis	Diphtheria	Scarlet Fever	Measles	Smallpox	Whooping Cough	Cerebrospinal Meningitis	Typhoid Fever	Diarrheal Dis- eases of Children	Cancer	Puerperal Septicemia
Ada.....	1,253	1,515															
Adrian.....	1,258	1,184															
Aitkin.....	1,719	1,896	1														
Akeley.....		1,636	1														
Alexandria.....	2,681	3,051	1			1											
Appleton.....	1,184	1,321															
Belle Plaine.....	1,121	1,301															
Benson.....	1,525	1,766	3														
Breckenridge.....	1,282	1,350	5	1													
Buffalo.....	1,040	1,124															
Caledonia.....	1,175	1,405															
Canby.....	1,100	1,505															
Cannon Falls.....	1,239	1,460	2														
Cass Lake.....	546	1,062															
Chisholm.....		4,231	5				1								1		
Clayson.....	962	1,056															
Delano.....	967	1,023															
Fosston.....	864	1,000	1	1													
Frazee.....	1,000	1,146	2														
Glencoe.....	1,780	1,805	2														
Glenwood.....	1,116	1,718	1														
Graceville.....	856	1,032	1														
Grand Rapids.....	1,428	2,055	4														
Hallock.....	805	1,014															
Hibbing.....	2,481	6,566	10	2												1	
Jackson.....	1,756	1,776	2														
Janesville.....	1,254	1,205	1														
Kasson.....	1,112	1,049															
Kenyon.....	1,202	1,252	1														
Lake Crystal.....	1,215	1,231															
Lanesboro.....	1,102	1,041	1	1													
Long Prairie.....	1,385	1,256															
Madelia.....	1,272	1,290	1														
Milaca.....	1,204	1,319															
Mountain Lake.....	959	1,063	2														
North Mankato.....	939	1,129	4			1											
North St. Paul.....	1,110	1,400															
Olivia.....	970	1,019	1														
Osakis.....	917	1,056															
Park Rapids.....	1,313	1,719															
Pelican Rapids.....	1,033	1,095															
Perham.....	1,182	1,366	3														
Pine City.....	993	1,092	2														
Plainview.....	1,038	1,140	1														
Preston.....	1,278	1,320	1														
Princeton.....	1,319	1,704															
Rush City.....	987	1,041															
Rushford.....	1,062	1,040															
St. Louis Park.....	1,325	1,491	1														
Sandstone.....	1,189	1,589															
Sauk Rapids.....	1,391	1,552	1														
Scanlon.....		1,122															
South Stillwater.....	1,422	1,572															
Springfield.....	1,511	1,546	2														
Spring Valley.....	1,770	1,573															
Staples.....	1,504	2,163	1														
Two Harbors.....	3,278	4,402	4														
Wadena.....	1,520	1,868	2		1												
Wells.....	2,017	1,814															
West Minneapolis.....	2,250	2,530	4														
Wheaton.....	1,132	1,346	1														
White Bear Lake.....	1,288	1,724															
Winebago City.....	1,816	1,553	1														
Winthrop.....	813	1,031	1	1													
Zumbrota.....	1,119	1,129	2														
State Institutions.....			30	8													
Other parts of State.....	1,012,328	1,085,886	569	51	4	32		17	2	3		5	1	1	21	30	5
Total for State.....	1,751,395	1,979,658	1287	124	11	73	3	33	4	5		10	8	8	36	82	10

Still births and premature births, not included in above totals.

THE JOURNAL OF THE MINNESOTA STATE MEDICAL ASSOCIATION AND THE NORTHWESTERN LANCET

VOL. XXVIII

OCTOBER 1, 1908

No. 19

SYMPOSIUM ON MENINGITIS

TUBERCULOUS MENINGITIS*

BY HERBERT W. JONES, M. D.

MINNEAPOLIS

Tuberculous meningitis is an inflammation of the pia-arachnoid caused by the tubercle bacillus. In 1768, over one hundred years before the discovery of the tubercle bacillus, Dr. Robert Whytt, of Edinburgh, described the disease in his monograph entitled "Observations on the Dropsy of the Brain." Numerous investigators described the condition later, and the discovery of the specific bacillus by Koch served to separate the disease into a definite entity with a known pathology.

ETIOLOGY

Tuberculous meningitis is almost always secondary to some tubercular focus elsewhere in the body, and the bacilli are carried by the blood-stream and lodge in the capillaries of the pia-arachnoid. One can imagine the germs getting into the blood-stream and lodging primarily in the meninges and there setting up an inflammation without other tubercular lesion in the body, but this is the exception and tuberculous meningitis is usually the terminal state of a tubercular focus in other tissues. It may be secondary to middle-ear trouble or infection of the accessory nasal sinuses, or tuberculosis of the skull. Some one has suggested a path from the lungs through the mediastinum and up the areolar tissue, anterior to the vertebral bodies, but these routes are undoubtedly the exception and not the rule.

Tuberculous meningitis may occur at any age, but it is distinctly a disease of childhood. It is rare up to six months, most common from two to ten years, and less common up to thirty-five years, after which age it is infrequent.

Heredity and predisposition to tuberculous disease elsewhere in the body, serve as etiological factors.

PATHOLOGY

The meninges are congested and the pia studded with greyish tubercles, which vary in number and size with the severity and chronicity of the case. There is an exudation of serum and lymph, which is usually yellowish in color and gelatinous in consistency. It may vary to a greyish or greenish color and be purulent.

The tubercles and exudate are usually at the base, but may extend to the vertex or to the choroid plexus. The lateral ventricles are often distended with the exudate or fluid, giving an acute hydrocephalic condition. There is round-celled infiltration in and around the vessel-walls, and the tubercles contain giant cells and may caseate in the center if allowed time enough.

The tubercle formation, infiltration, and exudation are more frequent where the blood-vessels enter the meninges, at the base, and consequently in the best place to affect the cranial nerves as they emerge from the brain and enter the skull. A single tubercle may become large enough to present all the symptoms of, and practically constitute, a brain tumor.

SYMPTOMS

The disease is often divided into three or four different stages, and the symptoms vary with the progress of the inflammation. The prodromal symptoms are often indefinite for a more or less protracted period. The child is fretful, peevish, and evidently not well, but a diagnosis is impossible. Change in the mentality is probably the most important and, at the same time, the most elusive symptom.

As the stage of pressure develops there is headache, vomiting, and constipation, with a variable amount of fever and relatively slowed

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pulse. The emaciation is more rapid, ocular palsies or diplopia develop, the reflexes are slightly exaggerated, and Kernig's sign is present. The mental symptoms become more marked, and convulsions may occur or opisthotonos develop. Muscular twitching may occur over the entire body.

In the final stage the patient is stuporous or completely comatose, and the reflexes are diminished. The pulse becomes rapid, and the patient dies in coma or convulsions.

Among the symptoms which may or may not occur during the course of the disease may be mentioned capricious appetite, bad breath, coated tongue, digestive disturbance, restless sleep at night or day-time drowsiness, dizziness, sensations of falling, choke disc, neuroretinitis, miliary tubercles in the choroid, strabismus, diplopia, ptosis, dilated, unequal, or irresponsive pupils, nystagmus, rigidity of the neck, hydrocephalic cry, Cheyne-Stokes respiration, boat-shaped abdomen, *tâche cérébrale*, hypersensitiveness, involuntary action of the bladder and rectum, and paralyses. Leucocytosis is not present.

The ordinary course of the disease is two to three weeks, but it may last three months.

DIAGNOSIS

The diagnosis of a well-developed case of tuberculous meningitis is easy, but very early diagnosis is almost impossible. Therefore the physician must be on the alert for the first definite symptom to change his diagnosis from hysteria to brain fever. The insidious onset often demands careful daily examinations to elicit information that will enable one to tell the family days ahead what they may expect. In older children and adults change in mental condition is, if rightly interpreted, a very valuable and early sign. Diplopia or ocular palsy should at once arouse suspicion of meningeal trouble. Kernig's sign is a valuable one, and is elicited by flexing the thigh to a right angle with the vertebral column and then extending the leg on the thigh so that the entire lower extremity is at right angles to the vertebral axis. The degree of angle at the knee represents the amount of Kernig's sign present.

Tuberculous meningitis may be mistaken for (1) acute meningitis, in which, however, the onset is more acute and the symptoms more intense; for (2) chronic hydrocephalic conditions, which are due to increased inflow or obstructed outflow of cerebrospinal fluid and have nothing whatever to do with tuberculous meningitis; (3) gastrointestinal disturbances of children with meningeal irritation from absorbed toxins; (4) the menin-

geal irritation of typhoid fever, pneumonia, and similar infectious diseases; (5) the various psychoneuroses, as hysteria, etc.

The absolute diagnosis is made at autopsy or by lumbar puncture. The spinal fluid obtained from a case of tuberculous meningitis is usually clear with flocculi floating in it. It must be centrifuged and examined for bacilli. Cultures and inoculations are usually too slow to be of any service to the patient, except as they may show other organisms.

In looking over the symptoms from the standpoint of diagnosis it will be seen that many of them are good only in retrospect. Malaise, slight fever, and digestive disturbances are practically useless in making a diagnosis, but when one finds a paralysis of the 6th nerve and then looks back over ten days of malaise, fever, and digestive disturbance, the picture may become much clearer.

PROGNOSIS

The prognosis is bad, although a few undoubted cases have recovered and it is conceivable that the human system is capable of destroying the tubercle bacilli even when growing upon such favorable culture-media as the meninges. Practically all well-developed cases are fatal.

TREATMENT

Prophylactic treatment is the only kind which can be recommended and is now receiving much attention in a general way throughout the world. Palliative treatment consists of sedatives and opiates, of which bromides, chloral, and opium, and its derivatives are the most important. Chloroform may be used for convulsions. Lumbar puncture temporarily relieves pressure. Supportive and eliminative treatment should not be abandoned until the diagnosis and outcome are absolutely certain, as the case may prove to be a simple meningitis.

THE ETIOLOGY, PATHOLOGY, SYMPTOMATOLOGY, AND DIAGNOSIS OF ACUTE CEREBROSPINAL MENINGITIS, OTHER THAN TUBERCULOUS*

BY ARTHUR S. HAMILTON, M. D.

MINNEAPOLIS

ETIOLOGY AND PATHOLOGY

By cerebrospinal meningitis is meant an inflammation of the meninges or the investing membranes of the brain and spinal cord, and the term

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is commonly taken, even without qualification, as applying only to the pia-arachnoid, which is very much more often involved than the dura mater.

Practically all cases of acute meningitis are cerebrospinal, for it is rare that inflammatory conditions of the membranes of the brain do not extend, at least in some degree, to the cord; and the reverse is also true. In the same way practically all cases of meningitis are really instances of meningo-encephalitis and meningo-myelitis, for the pia-arachnoid is so closely attached to the underlying nerve-tissue that inflammation of the membranes is readily communicated to the brain or cord, resulting in the collection of leucocytes and even of small purulent foci within the nerve-tissue itself.

It is now generally believed that acute meningitis is invariably the result of the invasion of bacteria, which gain access to the meninges by way of the blood or the lymphatics, or by direct extension from adjacent regions, as may happen in injury or middle-ear disease; and the importance attached in years gone by to race, diet and telluric and atmospheric conditions is now known to have been misapplied, though these conditions may still be looked upon as predisposing causes.

A large variety of bacteria is found in the meninges, but the diplococcus intracellularis meningitidis, the pneumococcus and the streptococcus are most often encountered. The diplococcus intracellularis, previously recognized but first clearly described by Weichselbaum, in 1887, is now known to be the cause of practically all cases of epidemic cerebrospinal meningitis, as well as of the sporadic primary cases. The pneumococcus occurs frequently as a secondary infection, but with the modern refinement in bacteriologic technic it is found more and more rarely as the cause of primary infection. In many cases there is a mixed infection, and the pneumococcus is often associated with the streptococcus or the tubercle bacillus. In injuries and in meningitis arising from neighboring purulent foci, the pneumococcus and the streptococcus, separately or together, are almost invariably found. In a few instances the staphylococcus, the typhoid bacillus, Friedländer's bacillus, the bacillus coli communis, the bacillus pyocyaneus, and the bacillus of bubonic plague have been found, almost invariably, however, as a cause of secondary meningitis. Just how the diplococcus intracellularis gains access to the meninges, and why the sporadic cases do not develop into epidemics, is as yet unsettled. The diplococcus is thought by many to be a nor-

mal inhabitant of the nasal cavities and neighboring sinuses, and it may be that under certain conditions it finds its way along the lymphatics or the blood-vessels into the meninges.

When these different bacteria, aside from the tubercle bacillus, have invaded the membranes of the brain or cord the gross anatomical appearance is much the same in all. In instances of very virulent infection there may be no change in the meninges that is visible to the naked eye, even up to the time of death, but in cases of lesser malignancy there is present, first, a serous exudate into the sub-arachnoid space. Next there appears on either side of the veins, especially those in the sulci between the convolutions, a white or yellow band, which, microscopically, is found to be made up of leucocytes and possibly of fibrin. As the condition progresses the exudate becomes greater and greater until, in a well-marked case, the veins are buried and the sub-arachnoid space is filled with a yellowish-green, purulent collection. In cases of direct transmission of infection, as from middle-ear trouble, the gross changes due to the meningitis are usually unilateral and, even in the most extensive, diffuse form, some areas are more involved than others. Thus the terms *leptomeningitis of the base* and *leptomeningitis of the vertex* are often employed, though there is never any clear dividing line between the two. In the septic and secondary forms the pia of the convexity is especially involved, and in infants the base is so often the seat of greatest exudation that a special clinical term, *meningitis of the base*, has occasionally been applied to this condition when occurring in infants. Extension along the fold of pia mater covering the choroid plexus is also common, and in this way the ventricles not infrequently become involved and are distended with a cloudy exudate or may contain even thickened pus. In prolonged cases the aqueduct of Sylvius or the foramen of Magendie may become occluded and give rise to acute hydrocephalus. Abscess formation and sinus thrombosis occur at times, especially in cases dependent upon middle-ear trouble.

The cranial nerves are at times embedded in the exudate and infiltrated with leucocytes, and, especially in the epidemic form of meningitis, may be the seat of neuritis, either acute or chronic. In the cord the processes are much the same as in the brain except that the exudate is ordinarily less extensive.

Microscopically, the vessels of the pia-arachnoid are found filled with blood and surrounded with leucocytes and fibrin, the former mostly poly-

nuclear. Bacteria can also usually be demonstrated. Frequently the leucocytes follow the small vessels or lymph-channels into the brain-substance. Around these collections of leucocytes, the nerve-cells are more or less degenerated, and the neuroglia increased. Occasionally large abscesses develop. In the other organs of the body the ordinary changes of acute febrile and toxic conditions are found.

SYMPTOMATOLOGY

As they are alike pathologically, so also the various forms of meningitis produce much the same clinical picture, but in secondary meningitis the symptoms are modified by those of the disease originally present, and I shall refer, first, therefore, to the signs of primary cerebrospinal meningitis, which means practically meningitis due to the diplococcus intracellularis.

The symptoms usually appear suddenly with a chill, rise of temperature to 104° F. or higher, projectile vomiting, intense headache, rigidity of the muscles of the neck, pain along the spine, and general hyperesthesia. Occasionally there is a prodromal period of one to three days, characterized by general malaise. When the disease is well developed the muscles of the neck and back are very rigid, so that the child can be raised from the bed by lifting on the back of the head. Not infrequently opisthotonos appears, and muscular twitchings are common. The headache and prostration are marked. Delirium is frequent, to be followed later, as the disease develops, by apathy and coma and convulsions. There is great hyperesthesia, and the slightest touch, an ordinary sound, or the light of day is very painful. As mentioned above, the cranial nerves are often involved, and we have pupils which are unequal and do not react to light. Strabismus and nystagmus occur, and blindness from optic atrophy may result. Facial paralysis, deafness, and difficulty in speech and swallowing are found. On the third or fourth day a petechial eruption frequently appears, giving to the disease the name "spotted fever," which it has often borne when appearing in epidemics. Herpes labialis and other skin manifestations are common. Stroking the skin with the finger produces a dark red stripe, the *tâche cérébrale*. The reflexes vary greatly in individual cases, but are ordinarily increased, though they are lessened or may even disappear toward the end of severe or fatal cases. Contractures develop, to be followed later by paralysis. Kernig's sign, or the inability to extend the leg when the thigh is flexed on the abdomen to a right angle, is frequent, especially in

individuals over two years of age. It is a valuable sign, but it is by no means constant in meningitis, especially in infants, and it has also occasionally been found in conditions not meningitic. Babinski's sign is infrequent. The temperature varies greatly, reaching as high as 106° and at times completely intermitting. The usual range is from 101° to 103° . Leucocytosis of the polynuclear type is ordinarily present and may reach as high as 55,000 per cmm. Albumin, casts, and diarrhea or constipation are often seen.

Lumbar puncture gives results of the most positive character and is more valuable than any other diagnostic measure, not only in determining the presence of meningitis, but also in differentiating the different forms. An aspirating needle is inserted directly below the spinous process of the third lumbar vertebra, a point which coincides with a line drawn through the crests of the ilia. The needle may be inserted directly in the middle line, especially in children, and is then passed slightly upward, or it may be inserted a little to one side of the middle line and is then passed slightly toward the median line, as well as upward. With a little experience it is ordinarily possible to secure an abundance of cerebrospinal fluid for examination, but in a few instances this has been found impossible and the failure has been interpreted as meaning a dry cord, though it is more likely due to lack of skill on the part of the operator or to some unusual difficulty in getting through the bony canal. In some hospitals this method of examination is now practically a routine measure, and, so far as I know, when done with care and cleanliness, has never been followed by any unfavorable results in cases of acute meningitis, not to mention its frequent positive therapeutic value and its necessity when serum treatment is used. The fluid should never be withdrawn by suction, but should be allowed to flow without assistance. When the procedure is to be carried out in an unruly or badly frightened child, a little chloroform is of great assistance, for even the most experienced operators often find the process an exceedingly tedious one. The resulting fluid should be tested as to pressure, clearness, specific gravity, and amount of albumin, as well as to its bacteriology and cytology. Normal cerebrospinal fluid is clear, contains few cells and less than 0.2 per cent of albumin. Through an ordinary aspirating needle it flows in drops. In meningitis it is turbid, contains leucocytes and bacteria and often some red blood cells. If the pressure is much increased, the fluid flows in a stream. Cultures

should always be made as well as direct smears. The finding of bacteria is a positive sign of meningitis. The failure to find them, especially when cultures are not made, is by no means conclusive.

Secondary meningitis appears subsequently to, or, rarely, practically simultaneously with, the condition on which it depends. There is present therefore the history of a previous illness, infection, or injury. If, with such a history, there suddenly develops intense headache, vomiting, Kernig's sign, delirium, convulsions, and, subsequently marked apathy or coma, the presence of meningitis must be strongly suspected. With these symptoms are usually associated hypersensitiveness to touch, light, and sound; contracted and, later, dilated pupils; disturbed reflexes; and jerking and stiffness of the muscles of the neck and back.

DIFFERENTIAL DIAGNOSIS

Under differential diagnosis we have to separate the meningeal irritation, sometimes called *meningismus*, seen especially in such conditions as pneumonia, typhoid fever, severe intestinal infections, and certain forms of rheumatism, from true meningitis, and also to differentiate the different forms of meningitis. Under the symptoms of secondary meningitis an attempt has already been made to give some of the indications of the onset of meningeal infection as a complication. When the symptoms are well marked a careful bedside examination will usually enable one to arrive at a positive conclusion, but where the condition is just developing or the symptoms are atypical, it may be impossible to make a diagnosis. In children, where the early symptoms of meningitis are so much like those of any other infection, the diagnosis is especially difficult. Under such conditions a lumbar puncture should always be made. Though it is not usually considered difficult to distinguish between meningitis and anterior poliomyelitis, I have recently seen an epidemic of poliomyelitis at Barnum, Minn., in which the onset of the trouble was very much like that of meningitis, including headache, vomiting, pain and stiffness in the muscles of the back of the neck, well-marked hyperesthesia, and delirium. The development of isolated paralyses, subsequently, and the failure to find any organism in the spinal fluid made a positive diagnosis.

As between the different forms of meningitis, diagnosis is often very difficult. Streptococcic and pneumococcic meningitis is usually associated with a preceding injury, septic condition, or an illness, and usually lacks the violent onset,

the marked rigidity of the neck and back, and the opisthotonos of the diplococcic form. In tuberculous meningitis in individuals above two years of age, the prodromal period is usually much longer, the disease runs a slower course, lacks the marked hyperesthesia, opisthotonos and high leucocytosis of the diplococcic form, and an examination of the interior of the eye may show the presence of tubercles. The evidences of involvement of the base of the brain are also often greater. In infants, however, the symptomatology of the tuberculous and diplococcic forms is essentially the same except that the spinal symptoms are rather greater in the latter.

Spinal puncture will usually enable one to make a positive differential diagnosis. In tuberculous meningitis the spinal fluid is often clear and contains an increased number of lymphocytes, but no increase of polynuclear leucocytes, and with great care the tubercle bacillus can usually be found by staining, Koplik reporting as high as thirteen cases out of fourteen. If other means fail, inoculation may be tried. In diplococcic meningitis the fluid is turbid and has a great number of polynuclear leucocytes, in which are found numbers of the diplococci, which grow readily on culture-media.

THE TREATMENT OF EPIDEMIC CEREBROSPINAL MENINGITIS, WITH SPECIAL REFERENCE TO THE USE OF THE SERUM OF FLEXNER*

By S. MARX WHITE, M. D.

MINNEAPOLIS

By epidemic cerebrospinal meningitis we mean to-day that infection of the meninges produced by *diplococcus intracellularis meningitidis* of Weichselbaum. The acute infection produced by *diplococcus pneumoniae*, those rare infections caused by other organisms, and tuberculous meningitis, while requiring treatment along the same line in many directions, have not as yet yielded to as rapid advance in treatment as has the disease under consideration. It is safe to say that we no longer look hopefully to drug treatment for results in any of these conditions, but the brilliant results of drainage in the so-called surgical infections, the equally brilliant results of antitoxic treatment as in diphtheria, and the results of inoculation of dead cultures, as in the method

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propounded by Wright and his school, lead us to look hopefully toward some of these means in this disease.

Drainage of the cerebrospinal meninges by means of lumbar puncture has been under trial for many years, and, while recoveries seemed to be traceable to this procedure, yet we recognize that the withdrawal of fluid from the lower end of the canal through a needle-puncture has most exasperating limitations, chief among which are—

(a) The occasional existence of purulent or fibrinopurulent, rather than watery, exudates.

(b) Blocking of the canal at some point or other by a fibrinous or fibrinopurulent exudate, which allows the relief of tension only below the point of such blocking.

Drainage through the cranial walls has been a procedure of such severity in itself that it is only under extreme or unusual conditions that it is attempted. That this may be indicated, especially for the sequelæ of this disease, is shown by a recent report by Cushing and Sladen¹. These authors removed fluid both from the ventricles and from the spinal canal, injecting Flexner's serum through the needle following the removal of fluid.

Radman² reports two cases in which systematic drainage of the lateral ventricles was employed to relieve the hydrocephalus.

MacKenzie and Martin³ report some interesting observations, both experimental and clinical, on the use of defibrinated centrifugalized human serum obtained from individuals who had recovered from the disease. Their observations pointed to the following conclusions:

1. "The serum of normal human blood contains substances in many cases which are bactericidal to the meningococcus; these substances are increased in amount or activity in the blood-serum of patients suffering from an acute or chronic meningococcic infection; and the serum of a patient recently recovered from infection shows the evidence of the presence of these substances in a still greater degree.

2. "The bacteriolytic action depends on the presence of a thermostable immune body which requires the presence of thermolabile complement to complete the process.

3. "The cerebrospinal fluid does not contain substances which are bactericidal to the meningococcus in vitro, and the methods of detection employed failed to demonstrate the presence of either immune body or complement; this is in

marked contrast to the blood-serum of the same patients."

Basing their action on these conclusions these authors were led to treat some clinical cases, twenty in all, where a bacteriological diagnosis was made. Their work is summed up in the following table taken from the Journal of Pathology and Bacteriology:

Sixteen Acute				Four Chronic	
Fourteen cases treated with serum from recoveries		Two cases treated with own serum		Two cases treated with serum from recovered pneumonia	Two cases treated with serum recoveries
Eight Recoveries	Six Deaths	Two Recoveries		Two Deaths	Two Deaths

In 1906 Wassermann and Jochmann⁴ proposed a serum for the treatment of this disease. In this country Flexner and Jobling⁵ have, on the basis of extensive experimental study in animals, proposed the employment of an antidiplococcic serum in man. Flexner has allowed the use of this serum only under the most careful clinical observation and in cases in which a bacteriological diagnosis is made. I do not understand that this serum is as yet on the market for use without restraint, and I believe that, if such care as this were used in connection with all of our attempts at advancement, fewer fiascos would occur and our real advancement would be more rapid. Flexner's purpose, as I understand it, is to make certain that this method gives actual and tangible promise of results in the hands of careful observers before its use shall become general.

The serum as made at present is from horses, which are first inoculated with a small quantity of a mixture of different strains of the meningococcus heated to 60° C. for thirty minutes. The dose is then doubled at each subsequent injection, and at last living organisms and autolysates are injected alternately at seven-day intervals. The serum which has been most used was derived from a horse which had been in process of immunization for over one year.

Flexner was led to employ the antiserum by inoculating it directly into the spinal canal in human beings through observation made by him on the bactericidal effect of normal sera and sterile exudates upon diplococcus intracellularis in vitro, and also because of the curative action of antidiplococcic sera in guinea-pigs and monkeys infected with diplococcus when brought into immediate relation with the focus of infection. Though recognizing the fact that the action of the meningococcus is largely by means of an

endotoxin, Flexner has noted that the chief lesions can be influenced directly by antiserum when injected into the spinal canal, and he has shown that, while it is important to secure neutralization of the endotoxin yielded when the diplococci disintegrate, the effect of restraint of growth and the multiplication of the diplococci may at some period of the disease be of even greater significance. In monkeys injected with mixtures of emulsions of diplococcic and immune serum simultaneously, or first with the emulsion and next with the immune serum, the diplococci diminish rapidly in numbers and are taken up more abundantly by the leucocytes. There is but little evidence of the mode of action of the antisera in man, but this is rapidly accumulating and it would seem as if enough data for a definite conclusion would be at hand soon.

Flexner⁵ gives the following general instructions for the use of the serum. These I quote verbatim:

"The antiserum should be kept in a refrigerator until it is to be used, when it should be warmed to the body temperature before it is injected.

"The antiserum is to be introduced directly into the spinal canal after the withdrawal of cerebrospinal fluid by means of lumbar puncture.

"The quantity of antiserum to be used at a single injection should not exceed, for the present, 30 cubic centimeters. It is desirable, although it would not appear to be essential, to withdraw from the spinal canal as much fluid as the amount of antiserum to be injected. The injection should be made slowly and carefully to avoid the production of symptoms due to increased pressure. This precaution should be exercised, especially where the quantity of cerebrospinal fluid withdrawn is less than the amount of antiserum to be injected.

"The injection of the antiserum should be repeated every twenty-four hours for three or four days or longer. Whether any advantage will be gained by more frequent or more numerous injections than here indicated a wider experience must decide. As much as 120 cubic centimeters of the antiserum have been injected into the spinal canal in four days without causing unpleasant symptoms.

"The evidence at hand indicates that the earlier in the course of the disease the injections are made the better the results. Hence, should the film preparation prepared from the first fluid obtained by spinal puncture show Gram-negative diplococci, some of which are within leucocytes,

an injection of the antiserum should be made immediately and without waiting for the result of the culture-tests. Should the diagnosis be left in doubt or the disease prove later to be of another nature than epidemic meningitis, no harm will have been done by the injection of the antiserum.

"Although the best results have thus far been obtained where the antiserum has been injected early in the disease, yet the serum should be used in its later stages also until our knowledge governing the value of the serum becomes more precise. The indications at present are that it is useless to employ the serum in very late stages of the disease in which chronic hydrocephalus is already developed.

"Precise records of the manner of action of the antiserum upon the general symptoms of the disease and the local inflammation and the diplococcus should be kept. Information is greatly desired on the influence of the antiserum upon the number, appearances, growing properties, etc., of the diplococcus, upon the relation of the diplococcus to phagocytosis, and on the number and appearances of the leucocytes, before and after the antiserum injections. Counting the leucocytes in the circulating blood, before and after the injections, would help determine whether the antiserum tends to bring a greater number of leucocytes into the inflamed membranes, or whether it leaves the number unchanged or causes cessation of the emigration.

"Until the antiserum is proven to be of value or of no value in the treatment of epidemic meningitis its manner of action should be carefully observed and recorded so that a definite decision may be reached as quickly as possible."

RESULTS OF SERUM TREATMENT

A number of articles have appeared during the current year, especially in the Journal of the American Medical Association, dealing with relatively small numbers of cases. Dunn⁷ reports forty consecutive cases of epidemic cerebrospinal meningitis treated with Flexner's antimeningitic serum. In all of these, diplococcus intracellularis was found in the cerebrospinal fluid. The mortality in this series was 22.5 per cent. Dunn concludes:

1. The use of Flexner's antiserum is of great value in epidemic cerebrospinal meningitis.
2. The use of serum at times aborts the disease, frequently rapidly relieves its symptoms, shortens its course, lessens the liability to sequelæ, and greatly reduces its mortality.

3. The serum should be used as early as possible in all cases, even of suspected epidemic meningitis.

4. It should be frequently repeated as long as there are symptoms or any tendency to relapse.

5. Late chronic cases are unfavorable for the use of the serum, but any case in which the diplococci are present has some hope of relief by its use.

6. Some cases are resistant.

Churchill⁷ used Flexner's antiserum in eleven cases. Seven recovered and four died. In only two of the latter was the presence of the meningococcus proved by bacteriological examination. Thus in seven of the nine proved cases the patients recovered. Churchill says: "As one watches the behavior of these patients after one, two, or three injections of this serum he is impressed with the astonishing change which comes over them,—the clearing mentality, the unsuffering expression of countenance, the evident comfort, even with the still retracted head and rigid muscles,—and he is filled with an optimism as to the ultimate result which perhaps is not yet justified."

Chase and Hunt⁸ give the histories of twelve patients treated with the Flexner antiserum. Three died and nine recovered. At the same time of ten cases treated outside the hospital, none of whom received the Flexner antiserum, one patient recovered and nine died.

Miller and Barber⁹ report four cases in which Flexner's antiserum was used. Three recovered and one died. In the same community twelve cases occurred in which antiserum was not used. One recovered and eleven died.

Robb¹⁰ used Flexner's antiserum at Belfast in thirty-two cases. Of these twenty-two recovered, eight died, and two were still under treatment at the time of the report with expectations of recovery in one of these. He refers to 275 patients admitted to the fever hospital prior to the end of August, 1907, in which serum was not used, of whom 199 died, giving a mortality of 72 per cent.

Flexner and Jobling¹¹ gave an analysis of 400 cases of epidemic meningitis treated with the antimeningitic serum. This includes those to which I have already referred and a number of others, some of which have not been published as yet. The authors have promised to publish a full report in the forthcoming number of the *Journal of Experimental Medicine*. They give a table of 393 cases with 295 recoveries and 98 deaths, i. e.,

75 per cent recovery and 25 per cent death. Details are given in the following table published in the *Journal of the A. M. A.*:

Patients	Total number	Re-covered	Died	Per cent of deaths
Under 1 year.....	22	11	11	50
Between 1 and 2 years...	19	11	8	42.1
Between 2 and 5 years...	68	52	16	23.5
Between 5 and 10 years...	79	70	9	11.4
Between 10 and 20 years...	105	80	25	23.8
Over 20 years.....	87	64	23	26.4
Age not given	13	7	6	46.1

Tabulated according to the period of injection they give a study of 328 cases in which the period of first injection could be determined quite definitely.

Period of injection of serum	Number of patients	Re-covered	Died	Per cent of deaths
First to third day.....	121	103	18	14.9
Fourth to seventh day...	100	78	22	22
Later than seventh day...	107	68	39	36.4

As to the manner of termination of the symptoms of 270 cases described in the histories, 201 terminated by lysis and 69 by crisis, i. e., from 25 to 30 per cent of the cases treated with the serum terminated by crisis.

In an analysis of 220 histories to determine the duration of active symptoms the period was found to be about eleven days after the beginning of injection. So far as the results of treatment on the diplococci, the spinal exudate, and on leucocytosis is concerned, briefly stated, they are these:

Soon after the serum injections the diplococci tend to be greatly reduced in numbers, to disappear from the fluid part of the exudate, to become wholly intracellular (unless they are now entirely absent), to present certain changes in appearance, as swelling and fragmentation, and to stain diffusely and indistinctly, and, coincidentally, to lose viability in cultures. The exudate in the meninges rapidly loses turbidity under the influence of the injections. The leucocytes in the circulating blood, which are usually increased in number, show a fall in number often rapid and even critical.

In the cases which are resistant to the serum the diplococci, the spinal exudate, and the circulating leucocytes are less influenced, and there may be progressive increase in the turbidity of the exudate, increase in the number of leucocytes in the circulating blood, and greater persistence of the diplococci, with a retention of viability after several injections of the antiserum. These are considered by Flexner as unfavorable indications.

Relapses in the course of treatment are not very frequent, and a fatal termination during relapse is rare when treatment with the antiserum has been resumed and pushed vigorously. No

figures are given to show the number and nature of complications in the treated cases, although this was said to be small, and the only persistent defect noted was deafness.

I have used the serum in one case only, and this proved at autopsy to be an extremely interesting, rapidly fatal case of miliary tuberculosis, with extensive miliary tuberculosis of the spinal meninges. This patient became ill only five days before death. Twenty-five cc. of fluid was removed by lumbar puncture, and an equal amount of Flexner's antiserum injected through the same needle without waiting to study the exudate microscopically or by culture. The exudate was cloudy, and Flexner, Dunn, and others recommend in rapidly progressive cases where the fluid withdrawn is cloudy and indications urgent that the serum be used, though a subsequent injection should not be given until the bacteriologic diagnosis is made.

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EPIDEMIC MENINGITIS*

By H. L. STAPLES, A. M., M. D.

MINNEAPOLIS

On account of the recrudescence of this disease in the Northwest, I have presumed that a consideration of the principal features in etiology, symptoms, and treatment may be of value.

It occurs in sporadic form yearly and occasionally becomes fanned into epidemic proportions. Its terrible symptoms, its mortality, the crippled condition, mental or physical, of most of the survivors, entitle it to a prominent position among the scourges of humanity.

In 1887 Weichselbaum demonstrated that the exciting cause was a micro-organism termed *diplococcus intracellularis*. Identification is so extremely difficult that experts only can differentiate it with positiveness from the pneumococcus and a number of other micrococci and diplococci.

Schottmüller claims that 42 per cent of the sporadic cases of meningitis are due to pneumococcic infection with a uniformly fatal result. The clinical symptoms of this are identical with the intracellular form. According to many observers mixed infections with the influenza bacillus, the tubercle bacillus, staphylococci, streptococci, and pneumococci are not infrequent.

Westenhoffer of Berlin, after thirty autopsies, claims the point of entrance to be the posterior nasopharynx and particularly the pharyngeal tonsil. The meningococcus was found in the majority of cases.

In Vienna to obtain a therapeutic serum horses are immunized against both pneumococci and meningococci.

Goodwin found the meningococcus in the nasal cavities of half the cases examined. Five per cent of forty-five healthy attendants exposed to the disease, showed the infection. Fifty-five non-exposed medical students were examined, and two cases showed an organism agreeing perfectly with the meningococcus culturally and in pathogenicity. Weichselbaum and Netter believe that meningitis due to the pneumococcus may appear in epidemic form. Some think that the pneumococcic infection may be a sort of allotropic form of the intracellular.

It has been suggested that an insect is the intermediate host in disseminating the disease, but of this there is no positive evidence. All cases of meningitis are cerebrospinal, the meninges of the cord being more or less involved, as well as those of the brain. The disease exists in cattle and may be reproduced by injecting rabbits with cultures obtained from cattle dying of the infection.

It is by no means to be classed as a nervous malady, but an infectious disease of children and young adults, though it has been discovered at necropsy in persons over seventy years of age. During the winter and spring of 1904-5 about 4,000 cases occurred in New York City, and over 3,400 died, making a mortality of over 75 per cent.

In this disease, to employ a quotation from Horace, "Pale death knocks at the cottages of the poor and the palaces of kings with an impartial foot."

It may occur in all localities and conditions, filth and uncleanness without doubt contributing to its extension. The infection takes place through the nasal passages and pharynx. The incubation period is usually placed at three or

*Read by Title at the 1907 meeting of the Minnesota State Medical Association.

four days. One attack probably gives immunity. The impression is steadily growing that this disease is communicable under certain conditions, especially where lesions of the respiratory tract exist.

Dr. Smith reported the case of a boy who died of meningitis. He was buried on Sunday, and the next Monday his mother washed his clothing. She and her infant child died in a few days. Dr. Hare reported the case of Dr. Craig who died in three days after attending a case. Dr. Moore of New Haven died after a similar exposure. Kirchner mentions one family in which the mother and four children were infected within a few days of each other. Several cases have occurred among German miners where the parents of infected children have conveyed the disease. Two cases of ward-infection are reported, yet for fifteen years such cases have been freely admitted to Mount Sinai Hospital without a new case developing. Epidemics in soldiers' barracks are especially noteworthy.

SIGNS AND SYMPTOMS

This disease is more protean and bizarre than all other acute diseases. Headache, dizziness, malaise may precede, but the onset is usually abrupt with chill, vomiting, photophobia, headache, restlessness, muscular twitching, and back pains. The muscles of the back of the neck become rigid, and the head retracted. Opisthotonos is a very frequent symptom. Where the vertex is chiefly involved (vertical meningitis), the above muscular signs may be slight or wanting. The vomiting is persistent without reference to the introduction of food. Delirium occurs early, passing into somnolence, and later on in bad cases a comatose condition appears.

General hyperesthesia is very frequent. The pulse is markedly irregular and often intermittent, bearing no constant relation to the temperature, sometimes changing its frequency from ten to twenty pulsations per minute. It is often slower than in health. In one case I was able to recognize the disease in a little patient by a pulse of 65, which I knew in health to be 90, and Kernig's sign. He said he felt fairly well, yet in four hours was unconscious. The temperature is extremely variable and irregular and bears no constant relation to the severity of other symptoms. A sudden rise of five to eight degrees has been observed, also the same fall without any prognostic value. After lumbar puncture in one of my cases the rectal temperature dropped to 91.4 degrees.

Convulsions are common in the young at the inception and later on in severe cases.

Respiration is usually accelerated and irregular, and may be as low as four or five per minute. Cheyne-Stokes breathing was frequently observed by me in severe attacks. A petechial or flea-bite rash, also many polymorphous eruptions and purpuric patches are common; hence the name, *spotted fever*. Herpes of the face, chiefly on the lips and nose, is more frequent and assists in distinguishing it from typhoid fever. This applies to both the pneumococcic and the intracellular form.

The tongue has at first a whitish coat; later is dry and brown. The bowels are constipated in the early stages; later diarrhea and incontinence may ensue. The abdomen is flat, rarely tender and not scaphoid.

Leucocytosis is present in all cases, being extremely variable in amount. Kernig's sign was present in nearly all my cases. It is not found in children under one year. A diminution of this sign is a favorable indication.

Babinski's sign was an occasional manifestation.

The knee-jerk was absent in about one-half the cases observed. In every case where the urine was obtained albumin has been present at some time in the course of the disease.

A French writer gives the following sign as helpful in diagnosis: About the fourth day of the disease if the head be grasped with each hand and bent backward the pupils will dilate. Bend the head forward toward the manubrium, and the pupils will close up. I have not been able to bring out this sign in all cases.

MACEWEN'S SIGN

When the lateral ventricles are distended with serous fluid, by percussion over the base of the frontal, the squamous portion of the temporal or the pterion a tympanitic note is obtained. The patient should be in the sitting posture. It is not useful in children under two years, who frequently give a mildly tympanitic note in health.

Fulminant cases may last but a few hours, ten and fifteen hours in two cases, while abortive attacks will fully recover in a week. Chronic cases may continue for five or six months with extreme and pitiful emaciation. One case is reported as dying on the 230th day.

The eye symptoms consist of strabismus, inequality of pupils, paralysis of the various nerves, conjunctivitis, keratitis, optic neuritis, iritis and plastic choroiditis. In the ear there are conges-

tion and inflammation of the labyrinth followed by inflammation and degeneration of the eighth nerve. In 64 cases recovering from meningitis, only thirty per cent had normal hearing.

Amaurotic family idiocy, first described by Sachs, an affection of the central gray substance of the brain and spinal cord, almost exactly simulates chronic epidemic meningitis. It is differentiated by the eye examination. The macula lutea is represented by a dark cherry-red point surrounded by a large white or bluish-white area over twice the size of the disc. The disease is rare and, curiously, is usually observed in children of Jewish descent. I have seen but one of these cases.

TREATMENT

Prior to this year (1908) the treatment was purely symptomatic. The recent researches of Flexner give us the substance of things hoped for, and the reports of serum treatment continue to show better results as the knowledge of dosage and frequency of administration increases.

The mortality has been reduced over one-half, and the duration of the malady shortened, while the liability to distressing sequelæ is notably diminished. It meets also the therapeutic aphorism, *nil nocere*. Besides the use of this measure much can be done in a general way. The patient should be isolated and placed in the hands of a thoroughly competent nurse. Nursing and nourishment are of paramount importance. The room must be large, well ventilated, and darkened. The action of the bowels and bladder must be carefully watched. Frequently elevation of the head and neck gives relief. An ice-bag to the head is comforting, while the spinal ice-bag, often difficult to apply, has its advocates. Blisters, thermocautery, and other counter-irritants have generally been abandoned. Crede's ointment gave no benefit in the New York epidemic.

On account of the infection in the nasopharynx a warm salt solution one-half of one per cent should be employed in irrigating the nose. This may be poured in with a spoon. High temperature may be reduced by cold baths or colon irrigation with cold water, but, as a rule, children do not withstand cold applications well. Aufrecht recommended hot baths at 104 degrees once or twice daily with the ice-bag to the head. It promotes sleep, relaxes the muscles, quiets the nervous system, and restores the consciousness. Two of my patients collapsed while this was being tried. Goppert says that some patients are too greatly disturbed by them, and a cool pack may prove beneficial in such cases.

The food consists of milk, eggs, meat juice, and broths, with water administered at frequent intervals. Forced feeding through the mouth or nose is frequently necessary. I am convinced that nutrient enemata are of value when properly administered. Often this is the only means of sustaining life. Hypodermoclysis gave me temporary benefit in two cases. The one great symptomatic remedy is opium, and morphine hypodermatically is by far the best method of administration. Its effect as a cardiac and respiratory stimulant on a child apparently moribund is most striking. It relieves pain, headache, spasms, and sleeplessness. A marked tolerance to the drug exists in this disease, yet we may say that the dose should be carefully studied as excessive amounts approaching the toxic doses do harm. Codeine and phenacetin are frequently used as substitutes in mild cases, and chloral is employed by the rectum, also chloroform inhalations to control convulsions. Iodide of sodium is given by many in cases of a long-continued character to promote plastic absorption. Whiskey acts as a food and tonic in the typhoid condition.

LUMBAR PUNCTURE

In 1891 Quinke demonstrated that this simple operation had a definite place as a diagnostic and therapeutic procedure. Up to the first year the spinal cord extends to the lower border of the third lumbar vertebra, but it steadily recedes upward on account of the rapid growth of the vertebræ to the first lumbar so that a large cul-de-sac is formed surrounding the nerves called the cauda equina.

If a line be drawn between the highest points of the iliac crests, it will cross about the interspace between the 3d and 4th lumbar vertebrae, the point usually selected for puncture. The spines in this locality are far apart and are short and thick. The angle of elevation is but slight. The child is placed on the left side near the edge of the bed and the back cleansed in the usual way.

The instruments best adapted are the Quinke set with manometer attachment, an important accessory, as fatalities have resulted from too free an evacuation of the fluid. The child's chin should be brought as near the knees as possible, which makes the spines more prominent and increases the spinal pressure. No anaesthetic is necessary as a rule. Cocaine or ethyl chloride may be utilized in certain cases. Puncture should always be made in the median line, midway between the spines in children and from 5 to 10 millimeters to the right in adults. The depth of

insertion varies from 2 centimeters in young children to 4 to 7 centimeters in persons over 12 years old. A small piece of rubber tubing is attached to the needle, the other end being fastened to a glass manometer tube about 15 centimeters long. The rubber tube is held parallel and on a level with the spine, while the glass tube is vertical. The fluid pressure is measured in the glass tube, which is then lowered and the fluid allowed to escape. When the pressure has reached from $2\frac{1}{2}$ to 3 centimeters no more must be withdrawn, as the normal pressure is 3 to 5 centimeters.

The amount of fluid withdrawn varies from 10 cc. to 60 cc.

Indiscriminate puncture is worse than useless and it is only to be employed according to Koplik where there is an evident accumulation of fluid

in the ventricles, indicated by unconsciousness, Macewen's sign, vomiting, dilated pupils, strabismus, an irregular pulse and temperature, with a vacant expression of countenance. In such conditions a life may occasionally be saved. Says Elsner, "Lumbar puncture is not a procedure for the careless or novice. It demands skill, cleanliness and judgment." A positive lumbar puncture is of great value, but a negative one is worthless. Early puncture with introduction of the serum is now advocated as soon as a positive diagnosis can be established.

In conclusion let me emphasize my belief that there is a distinct element of danger in permitting free intercourse among families where this malady exists and I commend the State Board of Health in demanding a report and quarantine.

ACUTE DEGENERATION OF THE LIVER FOLLOWING CHLOROFORM NECROSIS*

By FRANK CORBETT, M. D.

MINNEAPOLIS

Assistant Professor of Surgical Pathology, University of Minnesota

From time to time there have been reported deaths attributed to the late effects of chloroform. These cases, as a rule, present marked nervous manifestation,—vomiting, jaundice, rapid pulse, and acetone and diacetic acid in the urine, followed by death. On post-mortem examination some marked lesion of the liver is usually present with the other organs practically normal. From the fact, demonstrated by Nothnagel, that chloroform produced fatty degeneration of the liver when introduced into the stomach, chloroform was at once seized upon as the cause of this condition. A careful analysis of the total cases reported shows two distinct pathological conditions in these cases clinically identical:

First. True fatty degeneration of the liver, like all degenerations, is general in character. This same condition can be experimentally produced in animals by chloroform, and it is essentially the direct result of chloroform narcosis.

Second. A condition closely resembling the lesion of acute yellow atrophy (in Bevan's series three out of thirty cases). The liver-cells are granular, with fragmentary degeneration of the nuclei, and, finally, by a process of autolysis, present mere shadowy outlines.

That the second class of cases is entirely due to the chloroform is not definitely proven. The three cases reported by Bevan were all laparotomies as follows:

First. A case of strangulated hernia.

Second. A case of ovarian cyst with twisted pedicle.

Third. A case of diseased uterine adnexa.

In these cases the records do not show the presence of infection, but their character renders this probable; therefore three factors besides the chloroform may be considered:

First. Thrombi in the portal circulation due to trauma in handling the viscera.

Second. Sepsis of low grade of virulence giving rise to sufficient toxins to produce liver change.

Third. Absorption of toxins through the portal circulation from the intestines.

A review of the work that has been done in the laboratory in regard to the artificial production of liver-lesions, may be a help in solving the problem. These artificial conditions may be divided into three classes: degeneration, necrosis, and autolysis. In necrosis the cell is in complete disorganization, hence autolysis begins at once. There is a true protoplasmic decomposition from

*Read before the Hennepin County Medical Society, April 20, 1908.

which the cell cannot recuperate; the total nitrogen output is increased and the products of autolysis, amido acids, are present in the urine.

Degeneration is a general condition affecting all parts of the organ. The nuclei of the cells in this condition remain intact, therefore insuring certain life. As a matter of self-defense the cell stores up fat, and there result enzymotic disturbances and diminished urea, but increased ammonia-production. The chemical analysis of Wakeman and Jackson still further accentuate the difference, showing diminished hexon content in necrosis, but an increase in degeneration.

Autolysis is the dissolution of the cell due to enzymes in the presence of metabolic acids. In the living body acids resulting from the metabolism of cells are neutralized by the alkalinity of the blood; hence, autolysis does not occur unless the circulation is disturbed. Autolysis occurs after death, and also *intra vitam* in acute yellow atrophy in focal necrosis of wide extent.

The recurrence of fat in autolysis has been explained by Waldroge as follows: There are normally certain substances called combined fats, such as ovovitellin or lecithalbumin holding the fatty radicle in combination. During autolysis these become so split that protargol, lecithin, and neutral fats are liberated. Analysis (Jackson and Pearce) shows that the fats in cases of autolysis do not reach the normal amount.

From the immense amount of work that has been done in producing artificial necrosis and degeneration the following seem of importance in explaining the changes found in the liver following operation:

1. Ligation of the hepatic artery results in the increase of fat in the liver, but no necrosis. (Bainbridge and Seathes.)
2. Ligation of the portal vein results in atrophy and some necrosis, but in no fatty increase.
3. Ligation of part of the liver results in autolysis. (Jacoby.)
4. Hyalin necrosis of the liver-cells may be produced by the injection of hemagglutinative sera. These appear as small, irregular, yellow to brown areas sharply outlined by congested liver. The necrosis is hyalin, the cells stain poorly, fragmentation of nuclei occurs and the endothelium of the capillaries is normal. The cause is shown to be due to thrombi formed by red-blood cells fused by agglutinins. (R. M. Pearce.)
5. Liver necrosis produced by carbolic acid is due to occlusion of liver capillaries by clumps of phagocytic endothelial cells. (Mallory.)

6. Bruton and Bokenhain have shown that the liver-cells have an affinity for pure diphtheria toxine and are capable of reducing its poisonous qualities. The same has been stated by Metchnikoff in regard to tetanus toxine. H. D. Pearce and R. M. Pearce report a series of twelve cases of liver necrosis in horses treated with diphtheria toxine. The thrombi found in three of the cases were probably secondary. The lesions were a true necrosis with amyloid changes and were attributed to the toxines. These points show that true liver necrosis may result from circulatory disturbance, due, first, to mechanical ligature; second, to thrombi formed by agglutinated red-blood cells, or to the absorption of toxines.

A series of experiments to determine the effect of chloroform on the liver of rabbits was undertaken in the laboratory by Dr. Elizabeth Woodworth. Animals were chloroformed for a period of two hours and killed at varying intervals after anesthesia. The lesions found in the liver were those of fatty degeneration and nothing else. Necrosis was not encountered except in connection with an intercurrent infection in one case. A second series were chloroformed for two hours on two successive days with like results. The constant appearance of fatty degeneration indicates that this is the lesion, *per se*, of chloroform. Another significant fact elicited by the series of rabbits was the effect on the opsonic index. This was markedly lowered in all the animals, but it usually rose in the second and third days to normal. In one animal the opsonic index did not rise, but remained low until death occurred.

Example of a normal rabbit:

Index—1.06 before chloroform.

Index— .52 after two hours anesthesia.

Index—1.02 at end of 24 hours.

Index—1.08 at end of 48 hours.

This lowering of the opsonic index is emphasized to show the tendency of prolonged chloroform narcosis to lower the body resistance to infection. As has been shown, toxines are capable of producing necrosis of the liver. In the clinical case reported, the infection was of low virulence and small extent, yet the bodily resistance was so lowered that the toxines generated were the most probable cause of the necrosis.

Report of a case seen in consultation with Dr. Farr: Female, aged 36; cholecystostomy. Gilliam suspension of the uterus, appendectomy and resection of the ovary had been performed under ether. The anesthesia lasted one hour and fifteen minutes. The following conditions were present

before operation: uterus acutely retroflexed and adherent to the rectum; ovaries, densely adherent; gall-bladder, thickened and contained several stones and thin, clear serum. Soon after leaving the table the patient had a pulse of 160. There was mental excitement on coming out of the anesthesia, which gradually increased to delirium. Vomiting was incessant. The skin showed only very slight jaundice and just before death became cyanosed. The lungs were negative, and no adventitious sounds could be heard over the heart. There was no abdominal rigidity or distension. The area of liver dullness was greatly diminished. Acetone and diacetic acid were present in the urine. The pulse rose to 180, and death occurred at the end of fifty-two hours. The rapid respiration with cyanosis suggested the possibility of pulmonary embolism. Against this was the fact that the respiratory symptoms came on gradually while pulmonary emboli produce sudden dyspnea and rapid respiration as soon as they find lodgment. The possibility of general peritonitis was considered, but ruled out on account of the absence of abdominal rigidity and tympanitis. The negative findings in the heart and lungs excluded pneumonia and endocarditis. Shock differed from this in that in shock there are usually extreme pallor and coldness of the extremities. Under certain conditions we may have a form of Graves' disease giving rise to similar symptoms, but the normal thyroid excluded the remote possibility of the disease.

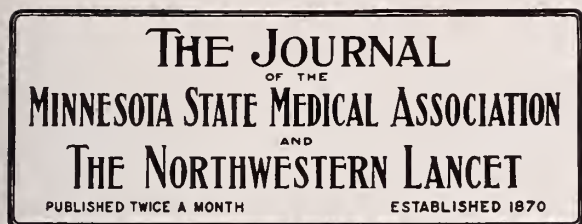
Post mortem: lungs, normal; no thrombi in the vessels; heart, soft and flabby; peritoneum, no evidence of general peritonitis. About the site of operation there are recent adhesions. In the gall-bladder region some new-formed adhesions with a small amount of serum and exudate. Cultures from this region showed streptococci of low virulence. The heart blood is sterile. The peritoneum is generally sterile. The liver presents a remarkable appearance. The size is about one-half normal; the capsule is shrunken and shrivelled; and the surface of the liver is a mottled-yellow and red color. On section the mottled condition extends in irregular areas in the liver substance. The portal system is empty, and a partial thrombosis occurred in the portal vein. The intestines are congested. The gall-bladder contains a red drainage-tube and is firmly attached to the border of the peritoneum.

On microscopic section the following histological picture presents: The liver cells occur in

radiating rows like the spokes of a wheel, and are separated by open spaces. In some areas the cells are nearly normal. In other places marked changes have taken place. The cytoplasm of the cell is frequently dissolved leaving a free nucleus. Some of the nuclei are granular and indistinct and the cells finally disappear altogether leaving an open space where the cells had been.

TYPHOID CARRIERS.

W. N. Park, New York City (Journal A. M. A., September 19), reviews the European literature of typhoid carriers, showing that an appreciable percentage of convalescents from the disease, and also a certain proportion of persons who have never knowingly had typhoid fever, are discharging typhoid bacilli in their urine and stools and gives the results of investigations made at the Research Laboratory of the New York City Board of Health. These include the history of a cook who carried and spread the disease nearly everywhere she was employed, and who, after sixteen months' isolation and unavailing treatment with internal antiseptics, etc., is still discharging the bacilli in great numbers. Examinations were also made of convalescents from the disease in two state insane hospitals and typhoid germs found in the stools in six per cent. These results show that the same conditions exist in this country as in Europe, namely, that fully two per cent of persons who have had typhoid fever are typhoid bacilli carriers. But besides these there are many who have become infected without developing the disease, and Park estimates their number as probably one in every five hundred adults. As most typhoid cases occur before the age of thirty, the average life of typhoid carriers must be about 25 years, so that we have the appalling fact that there are at least half as many recovered typhoid cases carrying bacilli as there are typhoid cases in any year, let alone the number of carriers who have never themselves had the disease. Park thinks that isolation is therefore out of the question except in special cases, like the cook mentioned, and that we shall have to rely on the more general methods of preventing infection and safeguarding our water and food supplies, not only when typhoid abounds but at all times, as we know that in every community unsuspected typhoid carriers may exist.



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MINNESOTA STATE MEDICAL ASSOCIATION MEETING.

In the last issue of the Journal-Lancet, the preliminary program of the Minnesota State Medical Association was published as a reminder of the next meeting in St. Paul, October 7th and 8th. The completed program will vary a little before the meeting. Additional papers have been secured but no fundamental changes will be made in the order of the program or in the orations or clinics.

This meeting in St. Paul should be a large meeting, mainly on account of the delightful season of the year, and also from the fact that there has been a cessation of Medical Society Meetings all over the country for two or three months. It is very easy to get out of the habit of attending a Medical Society Meeting, particularly after a long, hot season when everyone is trying to be as comfortable as possible.

An experiment is to be made this year, which is somewhat of a departure in that an afternoon or a part of the day will be given over to clinics by men from various parts of the State. This is a step in the right direction, and if we could secure a set of clinics covering a field of investigation, conducted by able clinicians, the meetings would be more interesting than if devoted entirely to the reading of papers.

The average Medical Society program contains papers on many uninteresting subjects, and it is

an undisputed fact that a great many of the papers are listened to perfunctorily and are seldom read after they are printed.

A man who has a new idea or presents a subject from a new view-point, or who from his experience has discovered a new method in diagnosis or treatment, no matter how commonplace the disease may be, receives merited attention. It is interesting, of course, to hear of rare and unusual diseases, but they are interesting only to a few. The average practitioner wants something new in the field of disease with which he is familiar. This does not mean that the average man is not interested in the advance of medical science, but it is a fact that the average man is more easily entertained and his mental processes more actively stimulated by the re-vamping of an old trouble which he sees in a new light.

We, as physicians, not infrequently get into a rut and it requires a superhuman effort to get out into the open and note progress. The science of medicine is not only becoming simplified in that it covers a broader field, but it has taught us that plain truths and facts, simply presented, are more valuable both for reference and mental refreshment, than are the observations of one man on his one case. There is too much detail in the treatment of simple things.

The coming program covers a variety of subjects and, undoubtedly, will attract not only a large attendance but a very active discussion of the papers.

The House of Delegates meets on the afternoon of October 6th, and on the evening of October 7th the Association will be the guests of the Ramsey County Medical Association. This is, in itself, enough to attract a large attendance.

THE WORLD'S FAIR ON TUBERCULOSIS.

The International Congress on Tuberculosis opened in Washington on September 22nd. Before this number of the Journal-Lancet is issued, the Congress will be in full session. The first few days are devoted to preliminary departments while, during the week of Monday, September 28th, the official opening of the Congress proper will occur.

This means the bringing together of not only a large number of representative medical men but of sundry scientists from all over the world, and it means also that there will be on exhibition the largest number of explanatory and educational exhibits every brought together before a Congress of any kind.

If the work done by the Minnesota State Association on tuberculosis is an index of the interest of the people, the educational advantages of an International exhibit must be almost incomprehensible.

The new national museum at Washington, a very large building, opening for the first time to the public by the International Congress, will be like an ordinary World's Fair. Unless one has been interested in the educational side of tuberculosis, it is impossible to realize without a personal visit what an exhibit of this kind means.

To get all these preventive principles before the people requires an enormous amount of newspaper space, and it will be impossible to cover the subject except as outlined by the Congress in the publication of three large volumes which are sent to each member who subscribes \$5 for his membership. These volumes should be on every physician's desk, but knowing the procrastination of the average doctor, only a small percentage of the medical profession will become members of the Congress; hence, the only way to get the conclusions of the Congress before the people is through the daily papers.

Another important convention which meets in Toronto the last two days of September and the first two days of October is the Association of Hospital Superintendents. It is unfortunate, perhaps, that these two meetings are in conflict as it would seem very desirable for the hospital superintendents to learn all they could concerning the care of those who are afflicted with tuberculosis, and it would be equally desirable that those who are interested in the care of tuberculosis should have an opportunity to hear the hospital superintendents detail their experiences and observations not only in hospital construction, but in the general care and management of the sick. This also means the establishment and conduct of training schools for nurses.

It is to be hoped that a large representation from Minnesota will be present at the Congress in Washington. So far, but few have signified their willingness to attend.

The Journal-Lancet hopes to present a resume of the Congress by some of its representatives who are now in Washington.

SUMMER DRINKS AND SUMMER COMPLAINTS.

The London Lancet has called attention to the fact that the people drink altogether too much of

fluid stuffs other than pure water. During a hot summer the average person is very thirsty. When one is accustomed to regular habits of drinking and eating, it is very easy to fall into the soda-fountain habit.

The Lancet goes so far as to claim that all beverages, which includes lemonade, plain soda, tea, and coffee, are drug drinks and that as such they create not only an abnormal thirst but produce various gastro-intestinal disorders. When one considers the thriving business done at the average soda-fountain in a drug store or candy shop and knows the mixtures that are put up by the white aproned clerks, it is amazing that more people do not suffer from intestinal disorders. The combination of fruit juice or fruits, which are exposed for hours in a heated atmosphere, mixed with ice cream made from unassorted milks and liquefied by the addition of the extract of marble dust and carbonic acid, requires a very strong digestive organ to digest and absorb this diabolical mixture, and yet these places are frequented by thousands of people daily.

Perhaps no immediate harm comes from such habits but, if continued, it would unquestionably produce a disorder of digestion. During this season, therefore, a large number of peculiar gastro-intestinal disorders, due in part undoubtedly to climatic conditions, appear. But perhaps the fault lies with the consumption of food and drink stuffs that have undergone changes which might have been prevented or which at least, if they had not been so inordinately consumed, might have eliminated this trail of diarrheas. Many of these cases are of short duration, lasting from a few hours to a few days, but some have continued for a number of weeks, producing, perhaps, no serious symptoms, nor do they seem to incapacitate the individual any considerable length of time, but unquestionably a continued diarrhea of this order must leave behind it a changed mucous surface. Undoubtedly, many forms of chronic intestinal disease originate in this manner and they, in turn, may involve other associated structures and thus give rise to persistent disorders of digestion.

The Lancet earnestly recommends that pure water is the best thing to relieve thirst, and if one considers the tribes of people who drink only water as a beverage, it will be found that there is rarely a disease of the intestine or stomach, nor are there many reported cases of the prevailing civilized condition commonly known as constipation.

DIVIDING FEES

The following letter sent to THE JOURNAL-LANCET from a physician in the western part of the state speaks for itself:

There are two definitions of this old term which call for distinction. If a city surgeon or specialist conspires with a general practitioner to charge an exorbitant fee with the dishonest purpose of securing the greatest amount of money possible out of the patient, or if it is done for the purpose of securing business which by rights should go elsewhere, there can be no defense for such dishonorable actions.

If by "dividing the fee" is meant a just and proper dividing of the total pay for diagnostic and operative work so that each man engaged shall receive appropriate compensation for his services, then who has any right to speak disparagingly of "dividing the fee"? There are wrongs on both sides of the question, as well as justice. The editor of the Journal of the American Medical Association, in an editorial, said that each physician connected with a case should charge his own and independent fee for his services. I do not suppose that he thought at the time that he was advocating a very dishonest plan, but such is the fact. As an example I will give details of a case in my own practice. A young man went to the hospital without consulting his home physician. He was kept under observation and diagnostic attention for four days and then operated upon. A young lady consulted me for an obscure trouble which I took considerable time and work to investigate. Finally I made my diagnosis and advised an operation at a hospital. She accepted my advice and asked for a letter to the hospital surgeons. I gave such a letter, and gave details of my investigation on which my diagnosis was founded for the surgeons to review and to assist them in studying the case. I told them that I had so far done thirty-four dollars' worth of professional work for the case, and had received my pay. The surgeon wrote me a letter of thanks for my assistance, and operated. The fee charged was exactly the same as in the previous case, and the patient was compelled to pay two fees instead of one for the same service. She came back and complained that she had been overcharged, and I told her that she had been robbed by the surgeon who should not have collected pay for the work which I had done.

The next case I had was sent to a prominent surgeon in with the instructions that I had done certain work on the case for which I demanded a just recompense, but it must not be added to the proper and just fee for the entire job. I instructed my patient to refuse to allow the surgeon to treat her unless he acquiesced in my arrangements. The surgeon refused, and I at once went up and took the patient to another surgeon for treatment. I think it just as honest to prevent a surgical hog from robbing my patient as it is to be so extremely ethical that I must do all my work on a case for nothing and give the hog all the pay.

We have omitted the names and places mentioned in the letter, as it is not necessary to include them for the sake of argument.

The writer of the letter expresses his opinion about certain practices, but he fails to make his point clearly. When he argues that each man who charges an independent fee advocates a dishonest plan he is in the wrong. Patients who consult various physicians or surgeons usually expect to pay for such advice or service as may be rendered in each case. Where patients are referred by one physician to another the usual independent fee is expected, no matter how much service is rendered by the former, and it is wholly immaterial how much the compensation amounted to. The surgeon who acknowledges the receipt of the patient is at liberty to charge what he considers his services worth. These are matters of business details, and an agreement between surgeon and patient is all that is required.

A complaint of overcharge is also a matter which is purely personal between surgeon and patient. The physician who referred the case is in no wise to blame, neither should he indulge in uncomplimentary comparisons.

If the last case referred to in the letter is clearly stated the physician who referred the patient to the surgeon was not justified in his demands, as he was not, or should not be, a party to any arrangement unless the patient was fully informed as to the division of the entire fees for the "entire job."

A good physician or surgeon who enters upon the treatment of a case is entitled to know something of the financial status of his patient and will make his charges accordingly, that is, on a definite business basis. There is no excuse under the circumstances for calling a man a "robber" or a "hog."

If the physician or patient is dissatisfied with the fee asked for by the consultant both are at liberty to go elsewhere. The editor contends that each man should give his best efforts to the patient and should be compensated accordingly. The patient should thoroughly understand who is to get the fee, and if there is to be a division he is entitled to know exactly where the dividing line is laid.

Fairness, frankness, and openness mean honesty, and if the patient complains thereafter he must be put in the disgruntled class. Unfortunately, this class is a large one, and its number and composition cannot be changed by any known method.

PHYSIOLOGIC CHEMISTRY AND DIETETICS

CONDUCTED BY

RICHARD OLDING BEARD, M. D.

Professor of Physiology, University of Minnesota

ASSISTED BY

J. P. SEDGWICK, B. S., M. D.

Instructor in Physiologic Chemistry, University of Minnesota

THE OCCURRENCE OF PEPSIN IN THE INFANT STOMACH AND THE DEPENDENCE OF ITS DIGESTIVE POWER UPON THE PRESENCE OF HYDROCHLORIC ACID.

Ueber das Vorhandensein von Pepsin im Magen des Sauglings und die Abhaengigkeit seiner verdauenden Kraft von der Anwesenheit von Salzsäure, von Dr. Walter Reeve-Ramsey.

Under the above title a very interesting piece of work, done at the Heubner clinic, appeared in the August number of the "Jahrbuch fuer Kinderheilkunde."

The carefully described experiments convince one that Dr. Ramsey is justified in his conclusions, which are as follows: (a) Pepsin is always found in the stomach of normal children at the breast; (b) Pepsin is usually present in infants suffering with acute digestional disturbances; (c) Pepsin and hydrochloric acid may be present in larger amount in a child affected with pylorospasm than in a normal child of the same age; (d) The stomach of a chronically atrophic child often contains no pepsin; (e) When atrophic children begin to improve and increase in weight, pepsin can be demonstrated in the stomach again; (f) The gastric juice of normal children has the power of converting protein into peptone, and this is possible without the addition of any acid except that which is found normally in the stomach; (g) The pepsin in the gastric juice digests energetically, even when lactic acid is present and hydrochloric acid is absent; (h) Hydrochloric acid and lactic acid may be present without pepsin, as well as pepsin, without the presence of hydrochloric acid or lactic acid.

The discovery that both pepsin and hydrochloric acid are present in larger amounts in the infant suffering with pylorospasm than in the normal infant is of especial value just now when there is such an interest in the pathogenesis of this condition. The pylorospasm has been attributed theoretically to hyperacidity. Two years ago Prof. Ibriham of Heidelberg said:

"As for the chemical cause of the physiologic pyloric closure, we know that the acid reaction of the stomach content is of prime importance. Since Sedgwick has shown that the acidity of the gastric juice in the infant stomach is largely dependent upon the effect of the Volhard fat splitting ferment, I believe we must direct our attention toward this point."

At the same time Pfaunder said, in speaking of pylorospasm, in breast fed children: "It is probable that the slight acid binding power of the human milk plays a role."

Dr. Ramsey's careful work certainly deserves the recognition that it has received in Berlin.

SEDGWICK

HYDROCHLORIC ACID IN THE NEW-BORN.

The valuable work of Dr. Walter Reeve-Ramsey, to which my collaborator, Dr. Sedgwick, refers, at length, in this issue, has its bearing upon both peptic and acid factors in the gastric digestion of proteins in infant life. It is a very important contribution to the literature of the subject. It does not, however, bear strongly upon the conditions of the strictly new-born infant, since but two observations are included of children below the age of one month and one of these was upon an atrophic hydrocephalic child. In both cases, the tests for free hydrochloric acid were negative.

The presence of gastric pepsin in the latter half of human foetal life has been looked upon as pre-significant of proteolytic power at birth and the denial by some observers, disputed by others, of the presence of hydrochloric acid in the stomach of the new-born has been in the nature of a contradiction to that expectancy, a contradiction, moreover, with which actual digestive results have been at war.

A series of observations, made by the writer, during the past few years, suggests, again, the error of the asserted absence of hydrochloric acid in the infant stomach of very early life and points, at the same time, to the probable source of that error.

Hydrochloric acid is unquestionably of minimal quantity in the stomach of the newborn, and such a minimum is commonly in pepsin or proteid combination. So combined, it is effective for, if suggestive of the limited range of, protein digestion of early infancy.

The observations referred to, made upon twenty infants, during the first two weeks following birth, show that the presence of free acid is rare (occurring in but two cases), but that combined acid was present in them all. After tests for free acids had failed, tests inclusive of combined acids would respond; tests for other than combined acids would show a margin in combined form; while positive reply to free acid tests would follow boiling of the filtered gastric fluids.

It is to be noted, in this connection, that the tests recorded by Dr. Ramsey are mainly tests for free acid reactions and lactic acid differentiation. He interestingly confirms the substitutive value of lactic acid for hydrochloric acid in peptic digestions of proteins.

BEARD.

THE FUNCTIONS OF THE NERVO-MUSCULAR MECHANISMS.

The fundamental properties of animal protoplasm, irritability and contractility, have long awaited a satisfactory interpretation. Neither physiologic experiment nor histologic observation has sufficed to determine the *modus operandi* of the nerve-muscle machine. They have revealed the results, but not the methods of action. They have settled many of the conditions upon which function depends and have recognized the influences by which it is affected, but they have not shown the nature of the function itself.

Great expectations have been cherished that recent researches in bio-chemistry and biophysics would throw new light upon the processes of irritability and contractility and already the reports published justify these hopes. They who have worked and waited long upon the solution of these problems are wary of too easy acceptance of new solvents, but they find good encouragement in the progress which these protocols indicate. These results should be of practical interest to clinical men.

Among the principal workers in this field, W. H. Schultz, of John Hopkins University, has recently published an interesting monograph. He offers evidence that, in contraction, the dissociable materials of the muscle cell are expended; that the colloidal particles in the cell

undergo important changes in size and position; and that the inorganic salts of sodium, calcium and potassium play an essential part in re-forming the dissociable material; calcium, among them, serving as an accelerator of physiologic recovery.

All of these apparently unrelated, but severally supported propositions fall into clearly relational place in the new conceptions of muscle-nerve action.

Perhaps the most striking contribution to the literature of the subject has been made in a series of articles, recently published in the *American Journal of Physiology*, in which Dr. Ralph S. Lillie, of the University of Pennsylvania, discusses the results of some exhaustive inquiries conducted by himself.

Dr. Lillie belongs to a school of investigators, essentially Anglo-Saxon in point of race and tradition, which brings to the work not only the finished technique in bio-chemistry and biophysics of the German and Norse students, not only the experimental aptitudes of British and American physiologists in general, but an imaginative quality which puts life into research and gives effective point to its results. The genius for facts is a great gift,—the distinguishing quality of the researcher. The genius for the meanings of facts is a higher gift and marks the true discoverer.

In interpretation, the investigator may occasionally err; but better a chance error, the brief following of a misdirecting sign, than the inability of one, engrossed with the mere pebbles of fact by the roadside, to read the directive messages written upon the great milestones of progress; or who, blinded by the near Bunsen burner of his personal inquiry, cannot see and follow the beacons which light up the successive hill-tops of scientific endeavor.

So it comes about that the work of such men as Dr. Lillie is not only investigative, but conclusive; is not only instructive, but illuminating.

Correlating the bio-physical and the biochemical facts which bear upon the physiologic action of the muscle cell, he finds four factors which enter into the sum of function:

First: A variable permeability of the limiting membrane of the contractile element, dependent upon its polarization or depolarization.

Second: A transfer, or, possibly, an interchange of ions between the interior and the exterior of the contractile element, attending upon the increased permeability of the cell-membrane, consequent upon or associated with the electromotive change which the stimulus or the

nervous impression, brought to bear upon the cell, induces.

Third: An aggregation change, in turn resultant upon this ionic transfer, which is in the nature of a concentration or coagulation of the colloids composing the contractile element, in which change the contraction itself consists.

Fourth: A restoration of the relative impermeability of the cell membrane, involving a dissociation, incident to the metabolism of the cell, of repolarizing ions (probably hydrogen), and a reaccumulation within the cell of a surplus of anions, the increase of which is responsible for the fine re-subdivision of the colloids to which the translucency of the resting protoplasm is due.

To analyze the influence of these several factors briefly: In the state of rest, the limiting membrane of the cell is relatively impermeable. The cell is electrolytically in equilibrium, or may be said to be polarized. A condition of tonus, or resistance, (Benedict) obtains, into the establishment of which the influence of Calcium ions may enter.

As the result of stimulation, or of the action of the impression created thereby, a depolarization occurs. Increased permeability of the cell membrane ensues, which may be brought about through the influence, again, of sodium ions, as Overton and Hoerber severally suggest, upon the surface layer of the cell element.

The resulting transfer of ions is directly responsible for the aggregation change of the colloids within the cell (Schultz), in which the actual contraction of the muscle tissue consists.

In the course of this destructive metabolism of the cell, the hydrogen ions are immediately dissociated, exhibiting a rapid velocity and serving as the agents of repolarization, the impermeability of the cell membrane being restored and the increasing anions within the cell promoting the solution or dilution of the colloidal protoplasm.

This series of events accords closely with the physiologically observed procession of function in the nerve muscle machine. It is remarkable that after all this rationale of nerve-muscle action has been elaborated, through these recent researches in bio-chemistry and bio-physics intelligently applied to the facts of function, the physiologist is still left in possession of his faith that these physical and chemical forces, operative within the tissue-cell, are but adapted to and modified by the conditions of the living protoplasm, and that, from beginning to end of this procession of functional events, an intrinsic,

specific and unexplained property of the living cell still determines its orderly response to an effective stimulus and its immediate and equally orderly return to a state of rest. Unanswered still remains the why—if not the how,—of that response and that reaction.

BEARD.

DELEGATES AND ALTERNATES TO THE STATE MEDICAL MEETING.

Society.	Delegates.	Alternates.
Aitkin Co.	Carlton Graves, J. L. George, Aitkin.	Aitkin.
Blue Earth.	J. W. Andrews, John Williams, Mankato.	Lake Crystal.
Blue Earth Val.	No Report.	
Brown-Redw'd.	G. F. Reineke, Giles R. Pease, New Ulm.	Redwood Falls.
Camp Release District.	D. N. Jones, G. E. Strout, Gaylord.	Winthrop.
	Ward Z. Flower, R. D. Zimbeck, Gibbon.	Montevideo.
Central Minn. District.	No Report.	
Chisago-Pine.	H. P. Dredge, W.A. McEachern, Sandstone.	Sandstone.
Clay-Becker.	Wm. J. Awty, F. H. Alexander, Moorhead.	Barnesville.
Dodge.	E. E. Harrison, A. L. Baker, West Concord.	Kasson.
Freeborn.	O. A. Burton, W. E. Todd, Albert Lea.	Albert Lea.
Goodhue.	J. V. Anderson, A. T. Conley, Red Wing.	Cannon Falls.
Hennepin.	J. W. Bell, C. H. Bradley, Minneapolis.	Minneapolis.
	A. E. Benjamin, A. S. Hamilton, Minneapolis.	Minneapolis.
	W. A. Hall, J. Hvoslef, Minneapolis.	Minneapolis.
	Geo. O. Eitel, J. C. Litzenberg, Minneapolis.	Minneapolis.
	J. E. Moore, Wm. R. Murray, Minneapolis.	Minneapolis.
	L. A. Nippert, J. H. Stuart, Minneapolis.	Minneapolis.
Houston-Fillmore.	J. T. Dunn, W. B. Grinnell, Wykoff.	Preston.
Kandiyohi-Swift.	G. L. Scofield, G. A. Newman, Benson.	New London.
Lyon-Lincoln.	B. C. Knudson, C. E. Persons, Tyler.	Marshall.
McLeod.	C. W. Tinker, D. L. Axilrod, Stewart.	Le Sueur Cen.
Meeker.	J. W. Robertson, H. E. Cassell, Litchfield.	Litchfield.
Mower.	F. W. Schultz, C. F. Lewis, Waltham.	Austin.
Nicollet.	E. P. Strathern, H. B. Aitkins, St. Peter.	Le Sueur Cen.
Olmstead.	No Report.	
Park Region Dis. & Co.	O. M. Haugan, Phil G. Cowing, Fergus Falls.	Ashby.
Ramsey.	J. A. Quinn, C. L. Greene, St. Paul.	St. Paul.
	Wm. Davis, Paul Cook, St. Paul.	St. Paul.
	Warren Dennis, H. P. Ritchie, St. Paul.	St. Paul.
	E. F. Geer, St. Paul.	

Red River Valley.	Isreal Lemieux, Thco. Bratrud, Red Lake Falls. Warren.
Rice.	F. U. Davis, C.W. Wilkowski, Faribault. Faribault.
St. Louis.	A. J. Braden, W. R. Bagley, Duluth. Duluth.
	J. M. Robinson, H. Collins, Duluth. Duluth.
	J. B. Weston, A. C. Taylor, Duluth. Duluth.
Scott-Carver.	Ed. E. Novac, O. R. Pozdena, New Prague. Winfield, L. I.
Southwestern.	C. C. May, Thomas Lowe, Adrian. Pipestone.
Stearns-Benton.	C. B. Lewis, A. D. Whiting, St. Cloud. St. Cloud.
Steele.	F. M. Smersh, J. W. Andrist, Owatonna. Ellendale.
Upper Missis-	J. A. Thabes, O. C. Trace, Brainerd. Little Falls.
Wabasha.	W. T. Adams, W. J. Cochrane, Elgin. Lake City.
Waseca.	H. G. Blanchard, J. F. Lynn, Waseca. Waseca.
Washington.	A. H. Steen, W.R. Humphrey, Cottage Grove. Stillwater.
Watsonwan.	J. W. McCarthy, Alb. Thompson, Madelia. St. James.
West Central Minn.	C. I. Oliver, B. M. Randall, Graceville. Graceville.
Winona.	F. H. Rollins, C. P. Robbins, St. Charles. Winona.
Wright.	John J. Catlin, Carl L. Larsen, Buffalo. Buffalo.

REPORTS OF SOCIETIES

HENNEPIN COUNTY SOCIETY

A regular meeting of the Society was held Sept. 7th. The president, Dr. F. A. Knights, occupied the chair, and thirty-five members were present.

Dr. H. L. Staples reported for the Telephone Committee and urged the members to assist in the election of aldermen favorable to the proposed ordinance fixing telephone rates.

The revision of the medical law, as proposed by the Legislative Committee, was presented to the Society for its consideration.

The scientific program being in order Dr. H. W. Jones read a paper on "Tuberculous Meningitis." Dr. A. S. Hamilton read a paper on "Acute Cerebrospinal Meningitis," and Dr. S. M. White read a paper on "The Treatment of Epidemic Cerebrospinal Meningitis, With Special Reference to Flexner's Serum."

The discussion of these papers was opened by Dr. W. H. Aurand and entered into by Dr. H. L. Staples, and Dr. L. A. Nippert, being closed by the essayists.

Dr. A. N. Bessesen presented a specimen of dermoid cyst. C. H. BRADLEY, M. D., *Secretary*.

HENNEPIN COUNTY SOCIETY.

A mid-monthly meeting was held Sept. 21, 1908. The president, Dr. F. A. Knights, occupied the chair and twenty-two members were present.

Dr. C. N. Spratt presented a case of Interstitial Keratitis complicated by a questionable growth of the iris; also a case of a patient on whom he did a Kroenlein operation for a malignant growth of the orbit.

Dr. C. E. Henry showed a tooth removed from a patient who was subject to facial neuralgia, the pressure of the root of the tooth having caused irritation of the nerve.

Dr. F. C. Todd presented models illustrating Diseases of the Eye.

Dr. A. W. Abbott read a paper with the title "The Position of the Appendix in the Fetus and Adult, Compared," illustrated by specimens.

The paper was discussed by Dr. S. H. Baxter and Dr. A. T. Mann.

Dr. A. T. Mann reported a case of Fistula of Branchial Cleft.

The president announced the program for the meeting of October 5th, as follows:

1. Intravenous Injections of Mercury—Dr. G. P. Crume.

2. An analysis of one hundred cases of abdominal section—Dr. G. C. Barton.

WM. R. MURRAY, M. D.
Secretary Pro Tem.

NEWS ITEMS

Dr. C. U. Abbott, of Aurora, has moved to Bena.

Dr. E. L. Fortier, of Fergus Falls, has moved to Perham.

Dr. C. E. Gale has moved from St. Paul to White Bear.

Dr. Myron Sherper has moved from St. Paul to Minneapolis.

Dr. J. C. Lawver has moved from Spencer, S. D., to Roswell, S. D.

Dr. Starr Judd and Miss Helen Berkman of Rochester were married Sept. 12th.

Dr. E. A. Riley, of Moose Lake, formerly of Willow River, has moved to Park Falls, Wis.

Dr. Aeneas E. McDonald of Morristown and Miss Emily Hedges were married August 31st.

Dr. E. A. Cokat, of Minot, N. D., has about decided to locate in Tacoma, instead of Seattle.

Bids were opened Sept. 15th for the construction of the Good Samaritan Hospital at Rugby, N. D.

Dr. W. F. Coon, of Downer's Grove, Ill., is attending the Post-Graduate Medical School of Chicago.

Dr. F. W. Patterson, of Belt, Montana, was married last month to Miss Eva. H. Malmo, of Owatonna.

Dr. C. F. Holmes, of Hecla, S. D., was married last month to Miss Roxy Crawford, of the same place.

Dr. Arthur Peake, of Valley City, N. D., was married last month to Dr. Frances Connell, of Fond du Lac, Wis.

It has been decided to build a Methodist hospital in Billings, Montana, at a cost of seventy-five thousand dollars.

Dr. F. M. Dryden, who comes from Illinois, has located at Euclid, and become associated with Dr. J. G. Chopin.

Dr. T. W. Hovorka, of Glencoe, is at home after spending several weeks doing post-graduate work at Harvard.

A meeting has recently been held in Du'uth for the purpose of securing the state tuberculosis exhibit for that city.

Dr. O. V. Johnson, of Sebeka, who has been doing post-graduate work in New York City, is at home, and with a bride.

Miss Ida Roberts, of the Wright Memorial Hospital of Fergus Falls will take a course of post-graduate work in Bellevue.

Dr. George W. Baskett, of Van Alstyne, Texas, has succeeded Dr. Husser as physician at the State Hospital at St. Peter.

Dr. F. P. Boyd, of Redwood Falls, Minn., has removed to Jacksonville, Ill., to be associated with Dr. Norbury in sanitarium work.

Dr. D. K. Thyng, of Willow City, N. D., is expected home from Europe shortly. He will hereafter devote his attention to surgery.

Dr. J. P. Chance, of Royalton, has received a medal from Congress in recognition of his bravery in rescuing a private who had fallen near the enemy.

A hospital association has been incorporated at Benson by the physicians and business men, and no doubt a building will soon be erected and a hospital established.

Fargo, N. D., has adopted inspection and physical examination of the school children and hereafter any child attending the public schools must first submit to a physical examination.

The Sisters of St. Francis are building an addition to St. Mary's Hospital in Rochester. The new portion is of steel and concrete construction and is fireproof. It is L-shaped and measures 34x74x102 feet.

Dr. W. W. Wood, of Chicago, for two years connected with the Lakeside Hospital, has purchased the practice of Dr. J. H. Bong, of Jasper, Minn. Dr. Bong goes to Chicago for special work and will spend the winter in a warmer climate for the benefit of his wife and son.

The following officers were elected by the State Medical Association of South Dakota: President, Dr. S. A. Brown, Sioux Falls; first vice-president, Dr. Thos. B. Smiley, Mt. Vernon; second vice-president, Dr. W. E. Moore, Tyndall; secretary-treasurer, Dr. R. D. Alway, Aberdeen. A full report of the meeting will appear in our next issue.

POSITION WANTED.

A nurse of four years' experience would like Institutional work. Best of reference given. No objection in going out of the city. Address Miss O. E. L. at this office.

ASSISTANT WANTED.

Wanted, an assistant physician, German preferred. A splendid opportunity for surgical experience. Good location in Minnesota town of 10,000 population. Address C. J. R., care this office.

POSITION WANTED.

I would like a position in a doctor's office in the Twin Cities. High school graduate and can give the best of reference. Address B. B. at this office.

INVESTMENT OPPORTUNITY.

An opportunity is offered a limited number of physicians to make an investment that promises splendid and legitimate profits. The Perfect Fireless Cooker has proven itself a winner. For the prestige gained \$5,000 in the stock of the company is offered to physicians in blocks of \$100 to \$500 at especially attractive terms.

The Cooker has been highly commended in the columns of this journal.

For further information, address M. & S., care of this paper.

THE JOURNAL OF THE MINNESOTA STATE MEDICAL ASSOCIATION AND THE NORTHWESTERN LANCET

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No. 20

PRESIDENT'S ADDRESS BEFORE THE MINNESOTA STATE MEDICAL ASSOCIATION*

By W. H. MAGIE, M. D.,

DULUTH

I hope you will pardon me for occupying your valuable time with an address, and I will assure you that it is only in compliance with our constitution and by-laws which say that the President of the Association must deliver an address at the annual meeting, that I am persuaded to undertake to address such a body of physicians, among whom there are many that I have looked upon as my teachers for more than twenty years past. However, I believe that all who have the interests of the medical profession at heart as well as the interests of the Association, will agree with me when I say that if we do not have some thoughts that concern the welfare of the State Medical Association and the medical profession in general, of which we have been members for a score of years or so, we have certainly been derelict in our duties to the profession as well as to the Association.

The Minnesota State Medical Association, then known as the Minnesota State Medical Society, had its birth in the month of December, 1855, and it became extinct some years later and was re-organized in 1869, from which date it has been in continuous and active life. It was again re-organized in 1903 to comply with a general plan of re-organization instituted and adopted by the American Medical Association. In order that we may have a more perfect understanding and that we may measure our success or failure as an association, I will quote from Ar-

ticle II. of our constitution and by-laws, setting forth the objects of the Association. Article II. says:

"The purposes of this Association shall be to federate and bring into one compact organization the entire medical profession of the State of Minnesota, and to unite with similar societies of other states to form the American Medical Association; to extend medical knowledge and advance medical science; to elevate the standard of medical education and to secure the enactment and enforcement of just medical laws; to promote friendly intercourse among physicians; to guard and foster the material interests of its members, and to protect them against imposition, and to enlighten and direct public opinion in regard to the great problems of state medicine so that the profession may become more capable and honorable within itself, and more useful to the public in the prevention and cure of disease and in prolonging and adding comfort to life."

Article II. is certainly a very comprehensive declaration covering in a few lines almost everything that could be desired in a perfect medical association. Has our organization succeeded or failed in its purpose? There is no doubt that in some respects we have succeeded beyond our most sanguine expectations, while in other respects we have not accomplished as much as we should have done. I quote from Dr. Wheaton's address delivered in 1889 as our President, in which he says that the total membership of the society after its re-organization in 1869 was one

*Read before the Minnesota State Medical Association, St. Paul, October 7 and 8, 1908.

hundred and nineteen. Compare these figures with our present membership, reaching at the present time about twelve hundred members, and I think you will agree with me when I say that in respect to numerical growth our Association has been a success, numbering now more than ten times as many members as it did at its re-organization in 1869. This is indeed a grand showing and is certainly one that can command the respect and pride of each of us. The combining into one organization of such a large body of intelligent physicians in one state so small as the State of Minnesota, cannot fail to have a beneficent and wide-spread influence upon medical thought, not only in our state, but reaching as it does into other states, has to do with the moulding of medical thought in other and older communities than ours. This influence for good has chiefly made itself manifest through our efforts to raise the standard of medicine as it pertains to medical education and practice, throughout the entire state.

The annual meetings of this Association bring us in closer touch with one another, making a larger acquaintance possible with our medical brother, and at the same time broadening our views of him, thereby enabling us to tolerate one another and feel that it is not only possible, but quite an enjoyable thing to live in the same universe with him. The benefits derived from the social side of these meetings cannot be overestimated. In my opinion it is one of the most desirable features of our annual meetings. It teaches us to "love one another" and brings out the best that is in us, and at the same time giving us a better idea of the other fellow. Since the re-organization of our County societies some years ago, by which they were made to conform with the re-organization of our State and National Associations, our growth has been most rapid. We must not be content with what we have accomplished, but must continue our campaign with the hope that we may bring into the fold of our Association every reputable practicing physician in the State. I cannot understand why so many physicians are content to live without any connection with their County, State or National Associations. It seems to me that the most important thing that he can do after obtaining his license is to join his County society. They are certainly the chief losers, as no practitioner of medicine can do himself or his patients justice without not only belonging to but also entering into the work of the County, State and National organizations. These facts are be-

ginning to be appreciated by the public and it is right that the public should become informed. I have often heard this subject discussed by laymen during which certain doctors were criticised for not having any medical society connections. If the public were made to understand the great value of membership in our medical organizations they would demand of their family physician not only membership, but active membership in his County, State and National Associations, under penalty of dismissal from their service as family physician. I don't care how bright a man is, he is compelled to rub up against the other fellow constantly or he soon becomes a back number, so to speak.

MEDICAL EDUCATION

Medical education in Minnesota today stands in as high a position as in any other state in the Union, and much higher than in many of our sister states as well as some foreign countries. We have been gradually raising the requirements preliminary to matriculation into schools of medical teaching until now it is necessary to have not only a first-class high school education, but added thereto a two years' college course. This probably should be the limit of minimum requirements and I am of the opinion that even this is higher than necessary. What effect this standard has had upon the character or quality of brains entering the profession is yet largely problematical. I will state incidentally from personal observation as well as information obtained from conversation with many physicians as well as laymen, that it has not so far as our observation goes, attracted a more desirable class of medical students than before. Dr. Arthur Dean Bevan, Chairman of the Council on Education of the American Medical Association, in a very exhaustive study of medical education, not only of this country but of Europe, sets forth his views in the August 15th, 1908, number of the Association Journal. The following extracts are taken from Dr. Bevan's paper, and constitute what he is pleased to term the American standard:

"A. The completion of a course in a high school such as was outlined by the committee of ten of the National Educational Association, or in other words, a high school having four years' course and which requires for admission the work of eight years in the elementary grades. This standard has been adopted by the Carnegie Foundation for admission to the College of Liberal Arts.

B. A thorough training in physics, chemistry,

biology and one modern language, preferably German, which means the equivalent of at least one year's work in our leading colleges of liberal arts. Many of the schools require two years of this work, which may probably be the better plan.

C. A four years' course in medicine which would include:

(a). Two years' study consisting largely of laboratory work in anatomy (including histology and embryology), physiology and chemistry (including physiological chemistry), pharmacology, bacteriology and pathology, and

(b). Two years of clinical work largely in dispensaries and hospitals, including a thorough course in practice of medicine (including physical diagnosis, pediatrics and nervous and mental diseases), surgery (including surgical anatomy and operative surgery on the cadaver), obstetrics, gynecology, materia medica, therapeutics, laryngology, rhinology, ophthalmology, otology, dermatology, hygiene and medical jurisprudence; there should also be a course of clinical microscopy including hematology;

(d.) A year as interne in a hospital; this last practical year is one of the most important in the course, and should be made compulsory."

Bevan also says: "A limited number of men will secure a college degree before entering a medical school and such men should be encouraged, but in the framing of a broad university scheme of medical education the requirement of a college degree of all medical students should not be seriously considered by us in America any more than it has been in Great Britain and Germany." This proposed American standard seems to me to meet all the necessary minimum requirements and if adopted by all the universities of the different states that teach medicine, would establish a desirable national standard of preliminary education as well as a standard of medical teaching bringing order out of the present chaotic and unsystematic many standards that are now in existence in the different states. If an American standard of preliminary requirements and medical teaching could be established, then the perplexing problem of reciprocity of medical license between the different states would be solved. What the medical profession needs is more good, honest, earnest men, men who desire to become physicians in order that their sphere of usefulness may become enlarged, men who look upon the profession of medicine as a real profession and not a business. The future

of the profession must depend more upon this fact, together with the high ideals that they may have established in their minds, than upon the fact as to whether they have had a college education previous to matriculation or not.

MEDICAL LICENSE

There is now a growing sentiment among the general public making itself felt through newspaper editorials as well as magazine articles, both medical and otherwise, demanding reform in medical license as it pertains to the practice of surgery along special lines. This sentiment has also permeated the medical profession to a considerable degree. Under our present law the young doctor just graduated from a medical college goes forth to battle with full authority to undertake surgical operations of the greatest magnitude without having had practical experience as an assistant to some practicing surgeon. Everyone who is connected with hospital work in our large cities knows that many of these young graduates without practical experience, with only a theoretical knowledge gained from textbooks or from didactic lectures, lured on by seeing the operations by the masters in surgery with the brilliant results, do not hesitate to undertake as soon as authorized by law the performance of the most formidable operations upon the organs of the abdominal cavity such as hysterectomy, cholecystectomy, gastro-enterostomy and many other less complicated operations. More often the diagnosis has been wrong and on opening the abdomen no disease can be found, and when unfortunately disease was present, three or four hours were consumed in the operation when thirty minutes would be sufficient in skilled hands and so much traumatism inflicted that the mortality resulting is enormous. This is not right, and I am of the opinion that this is a problem that demands a solution by the medical profession in the near future. If surgery is to maintain its high standing in the public mind of the future as in the past, these abuses of authority must be corrected by the enactment of laws prohibiting novices from undertaking operations that they are not qualified to do successfully except in emergency cases. It would be no more absurd to license a man as locomotive engineer without practical experience as a fireman whose only knowledge of the mechanism of his engine was gained through didactic lectures or textbooks, than it is to license young men, recent graduates from medical colleges, to undertake, except in emergency cases, serious surgical opera-

tions. There is more good surgery being done now than ever before, and I believe it is also true that there is more bad and indifferent surgery being done today than ever before. The logical outcome would necessarily mean the establishment of a standard by which men who feel inclined to take up surgery as a life work can be fitted for its safe practice. Dr. Maurice Richardson deals with this subject in his address delivered before the Surgery Section A. M. A. at the Portland meeting, and I cannot do better than quote his remarks in full:

"The burden of the following remarks is that those only should practice surgery who, by education in the laboratory, in the dissecting-room, by the bedside, and at the operating table, are qualified, first, to make reasonably correct deductions from subjective and objective signs; secondly, to give sound advice for or against operations; thirdly, to perform operations skilfully and quickly; and, fourthly, to conduct wisely the after-treatment.

"The task before me is a serious criticism of what is going on in every community. I do not single out any community or any man. There is in my mind no doubt whatever that surgery is being practiced by those who are incompetent to practice it—by those whose education is imperfect, who lack natural aptitude, whose environment is such that they never can gain that personal experience which alone will really fit them for what surgery means today. They are unable to make correct deductions from histories; to predict probable events; to perform operations skilfully, or to manage the after-treatment.

"All surgeons are liable to error, not only in diagnosis, but in the performance of operations based on the diagnosis. Such errors must always be expected, and included in the contingencies of the practice of medicine and surgery. Doubtless, many of my hearers can recall cases of their own in which useless, or worse than useless, operations have been performed. If, however, serious operations are in the hands of men of large experience, such errors will be reduced to a minimum.

"Many physicians send patients for diagnosis, and opinion as to the advisability of operation, without telling the consultant that they themselves are to perform the operation. The diagnosis is made and the operation perhaps recommended, when it appears that the operation is to be in incompetent hands. His advice should be conditional that it be carried out only by the competent. Many operations, like the removal

of the vermiform appendix in the period of health, the removal of fibroids which are not seriously offending, the removal of gall-stones that are not causing symptoms, are operations of choice rather than of necessity; they are operations which should never be advised unless they are to be performed by men of the greatest skill. Furthermore, many emergency operations, such as the removal of an inflamed appendix and other operations for lesions which are not necessarily fatal, should be forbidden, and the patient left to the chances of spontaneous recovery, if the operation proposed is to be performed by an incompetent.

"And is not the surgeon, appreciating his own unfitness in spite of years of devotion, in a position to condemn those who lightly take up such burdens without preparation and too often without conscience?

"In view of these facts, who should perform surgery? How shall the surgeon be best fitted for these grave duties? As a matter of right and wrong, who shall, in the opinion of the medical profession, advise and perform these responsible acts, and who shall not? Surgical operations should be performed only by those who are educated for that special purpose.

"I have no hesitation in saying that the proper fitting of a man for surgical practice requires a much larger experience as student and assistant than the most exacting schools demand. A man should serve four, five, or six years as assistant to an active surgeon. During this period of preparation, as it were, as much time as possible should be given to observing the work of the masters of surgery throughout the world."

In the older days, say twenty or twenty-five years ago, it was the custom for young men who had the surgical instinct sufficiently present in them that they desired to become surgeons, to begin with minor operations until gradually their minds and hands had become trained to the greater responsibilities connected with the major operations, especially as applied to abdominal, cranial and eye surgery. This was usually followed by a course under some practicing surgeon or post-graduate school before entering the field of abdominal surgery or ophthalmology. The ambition to become a surgeon is a laudable one and it soon overtakes the majority of medical students. Before they have been long engaged in the study of medicine they become fascinated with the work of the masters in surgery whose operations they have witnessed; impressed, as it were, with their benign nature and their

uniform good results, they have soon, even before graduation, decided to become surgeons. This desire is all right and should be encouraged in many cases, but as the field of surgery is not more than three or four per cent as large as that of medicine, the surgical field will soon become overcrowded, while the field of internal medicine would become deserted. At the present time it is common for many of the older as well as the younger practitioners to decide upon the necessity of an abdominal, cranial or operation for removal of the eyeball, and proceed at once to do it without asking the advice of surgeon or ophthalmologist. There are surely many borderline cases that should not be operated without the consent of the surgical or ophthalmological specialist.

THE FUTURE OF MEDICINE.

The future of medicine is to be developed along lines of preventive medicine. Already great strides have been made along these lines. Since the discovery of the germ causation of disease bacteriology has blazed the trail that has led us to the prevention of many diseases. Consequently the greatest good will be reached in the future through the prevention of disease. Twenty-five years ago typhoid fever made its appearance in epidemic form annually in many of our cities. Today typhoid fever rarely appears in an epidemic form as of old. When it does appear in epidemic form it reflects seriously on the intelligence of a community that would allow such conditions to exist as would produce typhoid fever. Where practical medicine and surgery of the future will save thousands of lives by direct intervention, preventive medicine will save its tens of thousands, and diseases like yellow fever, smallpox, tuberculosis, plague and typhoid fever will soon be entirely abolished from the civilized earth. Yellow fever is now one of the most rare diseases met with in the tropics, where a few years ago it was constantly epidemic. This is due to the discovery made by the Reed Commission, and through the splendid ability of Dr. Gorgas, our present President of the American Medical Association, it has been entirely abolished in the Panama Canal zone, not a case having developed there for more than eighteen months past. Dr. Gorgas has through his untiring energy not only abolished yellow fever in the canal zone, but has converted this territory that only six or seven years ago was a pestilential breeding-ground, into one of the healthiest places in our country. The death

rate in the Panama Canal zone for the last year was only twelve and a fraction per thousand per annum, while in New York City it was more than eighteen per thousand per annum. If American medicine had not done another thing but make this one discovery, the cause of yellow fever and its prevention, she would be justified if she remained dormant for the next generation. At the present time while the Minnesota State Medical Association is holding its annual session here in St. Paul, there is another and greater association known as the International Congress on Tuberculosis holding one of its most important sessions in its history at the capitol of our country. This meeting at Washington will be without doubt an epoch-making one. Specialists upon tuberculosis from thirty-three nations will be in attendance, as well as many distinguished laymen from foreign nations as well as from our own country. A great congress of this nature, world-wide in its character as it is, will certainly have a great influence on the public mind. It is only by and through the combined influence of the non-medical public as well as the medical profession, that a great good in the prevention of tuberculosis can be accomplished. The same can be said of the nations. It is only by a combined international onslaught that great progress can be made against such an insidious and ever-active foe as the "great white plague." Minnesota has made quite a respectable start in her fight against tuberculosis by establishing a State Sanitarium at Walker. There are many here today that know how hard it was for us to convince our legislature of the great importance of this small beginning. I hope at the next meeting of our legislature an aggressive campaign will be instituted for further appropriations for the continuance of the state's fight against tuberculosis. There are many problems to be solved in the future concerning tuberculosis. As all the cases cannot be cared for in the state sanitarium, many will necessarily be compelled to receive treatment at home or in camps or institutions established and supported by municipal or county organizations as well as in private sanitariums operated by specialists on tuberculosis. We now have several private well-conducted institutions of this kind in operation in our state, and we should encourage them by sending to them our private patients for treatment. It is said by competent authority that one hundred and fifty thousand people die annually of tuberculosis in the United States. It is also stated that there

are living in the United States at the present time one million people afflicted with tuberculosis, and there are five million persons now living in the United States who are doomed to die of tuberculosis if they continue to live under our present conditions. These figures are simply appalling when we consider that tuberculosis is a preventable disease and, in a very large majority of cases, a curable disease if recognized in its

early stage and properly treated.

I wish to embrace this opportunity of again expressing to you my great appreciation of the honor you conferred upon me by electing me your president last year, and to also congratulate the Association upon its success, not only for its great increase in membership, but for its many contributions to the literature of scientific medicine and surgery.

THE PRINCIPLES UNDERLYING THE TREATMENT OF ACUTE INTESTINAL OBSTRUCTION

A STUDY OF ONE HUNDRED AND TWENTY-ONE CASES OF ACUTE INTESTINAL OBSTRUCTION, FROM THE MASSACHUSETTS GENERAL HOSPITAL CLINIC*

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CASES OF ACUTE INTESTINAL OBSTRUCTION. MASSACHUSETTS GENERAL HOSPITAL CLINIC 1898—1908.

Following operation:

	Total.	Died.	Recov.	Per Cent of Mor- tality.
Early	18	13	5	72
Late	19	6	13	32
Total	37	19	18	51
Without previous operation....	33	18	15	55
Meckel's diverticulum	9	7	2	..
Volvulus	9	9	..	..
Intussusception	27	..	..	52
Under one year.....	11	9	2	..
Under 3 years.....	16	5	11	..
Under 6 years.....	16	11	5	..
Congenital malformation	2	2	..	..
Stone in Gut; Hernia in Peritoneal Pouch; Hernia Foramen Winslow Mesenteric Embolism.—Of each, one case. All died.				
Total, 121 cases—mortality 60 per cent.				

Never before in the history of medicine has the subject of intestinal obstruction attracted more wide-spread attention than at present. We are all interested in the problems involved in these cases. Individuals suffering with intestinal obstruction usually first come under the observation of the physician. The surgeon should have a clear appreciation of the relative values of the clinical facts collated by the internist. The internist needs to know the accomplishments and limitations of surgical art applied to this, one of the gravest of emergencies.

Cases of intestinal obstruction are naturally arranged in two groups, the *non-mechanical* and the *mechanical*. The *non-mechanical* group includes those instances of abdominal pain, distension and vomiting, with constipation, seen under

the following conditions: (1) associated with an abdominal contusion. It is more than likely that the intestine is actually injured by the contusion of the abdominal wall (Munro). The obstruction resulting is not merely a reflex from the abdominal parietes, but may be dependent upon the intestinal lesion; and (2) in the non-mechanical group, those obstructions associated with abdominal inflammatory processes; as, for example, appendicitis. How often does the attending physician make the diagnosis of obstruction of the bowels, when really there exists a primary appendicitis with a physiological cessation of peristalsis protective to the individual; (3) the obstruction seen associated with pneumonia. I have operated upon three or four patients, all children, for suspected appendicitis, in whom no appendicitis was found. In each of these cases, a latent pneumonia was considered possible and subsequent to operation, a frank pneumonia became well defined, and upon the right side of the chest; (4) the obstruction seen with acute nephritis; (5) the purely reflex type, such as has been demonstrated to occur following crush of the testicle associated with hepatic colic, renal calculus, torsion of tumor pedicles, strangulation of the omentum; (6) the obstruction seen in acute pancreatitis with fat necrosis; (7) the obstruction met with after clean laparotomy wounds, due primarily to trauma or unrecognizable sepsis.

The observations of Durham and Buxton upon

*Oration in Surgery, read before the Minnesota State Medical Association, Oct. 8, 1908.

peritoneal infections and upon the part played by the omentum in such infections and the observations of Robson and Stengel strongly emphasize the view that the cause of obstruction in these cases is a mild degree of infection which may show no gross lesion. These cases have been spoken of, hitherto, as instances of peritonism, peritoneal infection, reflex obstruction, functional ileus.

All that one can say is that these are not the result, primarily, of mechanical conditions, but probably of infection. The infection acts directly or indirectly upon the neuromuscular intestinal mechanism. Such cases require, at least at the outset, rectal enemata, physostigma if there is no gross sepsis (physostigma inhibits the spinal center). Lavage of the stomach, the use of the rectal tube, and possibly ileostomy or colostomy temporarily relieve the physical condition.

The *mechanical group* include the obstructions caused by a band and an adhesion, by a kink of the intestines, by an intussusception, a twist or volvulus, by a stone within the lumen of the gut, by a new growth and tumor pressing upon the outside of the bowel, by tumors growing in the wall of the bowel, and by the various forms of hernia. Such conditions as these constitute the mechanical group of intestinal obstructions.

The individual is seized suddenly, when apparently well, with violent abdominal pain, vomiting and nausea, defection from the rectum followed by constipation. A few hours later follow hiccough, slight meteorism, and early signs of shock and collapse.

Later he lies back in bed prostrate, with gaunt cheeks and sunken eyes. His pain has vanished, but some haunting fear has taken its place. His hands wander with pathetic restlessness over the bed clothes, and are cold and damp. Beads of sweat stand on his brow. His face is pinched, his expression vacant and staring, his voice is feeble. The pulse has sunken to an uncountable thread. There is regurgitation of blackish vomitus through mouth and nose. The breathing is ineffective and shallow and accompanied by faint sighs, and perhaps by feeble inarticulate groans. The countenance is ashen and livid. Such a picture makes a reality of the metaphor, "the shadow of death." This is the only too familiar picture of an unrelieved acute mechanical intestinal obstruction. (See Treves' picture of acute intestinal obstruction.)

How often have the internist and the surgeon, alone or together, gazed upon this picture in the dying and felt themselves powerless. It is a

startling fact that had the diagnosis been accurately made at the onset of the disease, relief might have been afforded. Where does the responsibility rest? Either the physician was not summoned early, or having been summoned did not recognize the conditions present and the seriousness of the situation or the operator was inexperienced, or the case was one in which the lesion was most virulent.

In order to facilitate the early diagnosis and the most efficient treatment of acute intestinal obstruction, we require all the information that it is possible to gather from clinical experience, from experimental physiological and chemical data, from the postmortem room and the operating table. It is to a very brief statement of the facts derived from these various sources that I wish for a moment to direct your attention. It is upon these facts that is based the present treatment of intestinal obstruction. These facts form the principles of treatment.

The anatomical or *mechanical* conditions associated with intestinal obstruction formerly naturally attracted most attention and concern. If the volvulus was discovered and untwisted, if the strangulated band was divided, if the intussusception was reduced, at this point the surgeon's or physician's duty ended. He thought of little else.

We understand today that not only must the surgeon determine the seat and the character of the obstruction, but he must recognize the physical and vital changes also in the bowel, and the general physical and vital changes in the individual and be guided thereby.

What happens in an acute intestinal obstruction? What changes take place locally in the bowel? What causes the great shock? Why is death so early?

Two notable factors are present in every intestinal obstruction. First, there is an obstruction to the passage of the normal intestinal contents; and second, there is an obstruction to the circulation in the wall of the gut.

The symptoms are out of all proportion to the importance of the first factor, the intestinal stasis. We know that *prolonged* fecal impaction may exist without such symptoms.

If the intestinal stasis is of comparatively slight importance consider the changes in the wall of the gut. These changes in the completely obstructed gut are rapid. The hypertrophy and ulcerations of chronic stenosis are absent. There is no time for them to occur. The gut above the obstructing band is distended and di-

lated. The contents of the gut accumulate. In from four to eight hours the vascular changes result in a marked venous stasis. The wall of the bowel becomes thick with œdema. The contents of the gut change to a liquid fecal matter containing serum and blood cells, together with bacteria. The experiments of McClure demonstrate that the number of bacteria developed above the obstruction may become enormous. The distension of the gut may be great.

The vascular stasis may be so pronounced as to cause blood to appear not only in the lumen of the gut, but also within the peritoneal space. At operation, therefore, a bloody fluid will be found within the abdomen. F. T. Murphy has demonstrated the vascular changes occurring in strangulated animal gut. He found that "obstruction to the venous flow produces much more prompt and serious symptoms than obstruction to the arterial supply of the gut. If the arterial supply was cut off the symptoms were fairly well marked after eighteen to twenty-four hours. If, on the contrary, the arterial supply was not cut off but the venous return was obstructed, the animal began within an hour to vomit, lose muscular tone and usually died in from twenty-four to thirty-six hours. The walls of the obstructed loop were found to be œdematous, dusky and softened, with bloody fluid in the abdominal cavity. There was found to be a disintegration and ulceration of the mucosa. There is always a microscopic and there may be a macroscopic perforation of the gut. The venous stasis is very serious."

It has been demonstrated by Mall and others that the intestine normally lives an independent life in a way. It receives its own special nerve stimuli in the plexus of Auerbach. In these cases of obstruction the gut is paralyzed. There is eventually a cessation of peristalsis. The results of the experiments of Mall and Booker lend weight to the explanation that the paralysis of the gut is occasioned by the direct action of the toxins within the intestine upon the plexus of Auerbach. That is, the toxins within the gut reach the nerve cells directly.

Gas develops in the affected loop. This gas accumulates from above but may be developed from the putrefaction of nitrogenous material within the gut. Because of the damage to the intestinal wall and the consequent circulatory changes there may be a diminution of the normal absorption of gas from the affected loop, and consequently an accumulation may result. A distension of the strangulated loop may be one of

the positive signs of intestinal obstruction. The local meteorism, so called, or the sign of Wahl, as it is named, is always to be sought for in cases of intestinal obstruction.

Bouchard thought that the cause of the symptoms present was the absorption of poisonous substances developed in the strangulated loop of intestine. He called this the autointoxication theory.

Kukula believes that not only toxic fluids but toxic gases may be absorbed from the intestinal loop. Albeck thinks that the accumulating intestinal poisons may be regarded as putrefactive poisons. Boeszky and Genersich consider the severer symptoms of intestinal obstruction as due to a general septicæmia, largely a colon bacillus infection. Nesbitt and Clairmont and Ranzi think the autointoxication theory of Bouchard is the most plausible. McClure concludes that it is difficult to understand how a reflex through the intestinal nerves can explain the symptoms of intestinal obstruction as well as the intoxication theory.

Roger of France has recently advocated the autointoxication theory and suggests the idea of a syndrome of gastrointestinal insufficiency. That is, it is possible that the secretions of the intestine above the obstruction are cut off and diminished, and just as there is a renal insufficiency and a thyroid insufficiency, so there may be a gastrointestinal insufficiency. Reichel has demonstrated that obstruction to the lumen of the gut alone is insufficient to cause serious symptoms, but that there must be an infection at the kink.

Dudgeon and Sargent have demonstrated that the intestine is normally impermeable to bacteria. Pathological changes of very slight degree, and special lesions of the epithelium make penetration of the intestinal wall possible. The experiments of Birsch Hirshfeld, Wurtz and Hudala emphasize these facts. Any damage to the anatomical integrity of the gut permits permeability.

Bacterial toxins may cause an infection independently of any gross peritoneal changes. Obstruction without gross evidences of peritonitis really may be cases of chemical poisoning, and no bacteria may be found within the peritoneal cavity.

Maury concludes from experimental work recently done that death in duodenojejunal obstruction may be due to the absorption of certain toxic elements of the bile, which are normally harmless because of dilution and suspension

in the secretions of the intestine, rather than to bacterial infection. The greater the distance from the bile duct papilla to the obstructive point, the more dilute is the accumulated material, and therefore, the less toxic is it. The mortality, therefore, diminishes as the obstruction is lower in the gut.

Bond has demonstrated that the omentum takes care of a large number of bacteria at the initial infection, but that eventually if the infection is severe a peritonitis follows. It is of practical interest that possibly the peritoneal fluids thrown out may be bactericidal in their action, particularly if the bacteria are of little virulence. In other words, the peritoneum by this pouring out of fluid may be protecting the body against an invasion.

It is of interest in this connection that the peritoneum possesses the power of absorption of deleterious substances. Muscatello demonstrated that the upper peritoneum in the region of the diaphragm absorbs more than the lower region of the pelvis. Clark, basing his advocacy of postural drainage upon this fact, elevated the foot of the bed in order that the infectious material might be more rapidly absorbed. Fowler reversed this position, and instead of permitting the individual to drain the infectious material into himself, raised the head of the bed and drained the peritoneal fluids into the pelvis and removed such material from the body by external drainage. Fowler thought that he thus avoided rapid absorption by the diaphragm.

Bond and Cannon have demonstrated reversed currents in the gut and normal reversed peristalsis. These facts Murphy, of Chicago, took advantage of, and suggested the seeping of normal salt solution into the rectum in order that it might be rapidly absorbed from the wall of the gut and thus dilute the poison.

The cause of the *pain* of intestinal obstruction Lenander has recently demonstrated to be an irritation of the nerves of the mesentery and parietal peritoneum. Rough handling of the bowel through traction on the mesentery is, therefore, to be avoided in all intra-abdominal manipulations.

Feculent vomiting has been demonstrated to be dependent not only upon a contraction of the abdominal muscles and compression of the stomach directly, but to be caused by a reversed intestinal peristalsis, demonstrated by Cannon.

The important and startling clinical fact in cases of intestinal obstructions is the profound intoxication, the toxemia, the general sepsis. The

cause of this toxemia is an autoinfection from the damaged gut. These two fundamental conceptions must underlie and be the basis of every thought and every effort in the treatment of intestinal obstruction.

In the light of these later findings what should be the treatment of a *suspected* case of acute intestinal obstruction? The changes in the bowel are so *rapid* that the diagnosis having been made, action should be immediate. Delay may mean death.

If there is doubt about the diagnosis and the patient has abdominal pain without involuntary muscle spasm, is distended without fever, *no cathartics* should be given by mouth. If there is a beginning peritonitis it will be increased by the catharsis. If there is infection in any part of the abdomen the increased peristalsis occasioned by the cathartic will spread the infection to another part of the abdomen.

More harm is caused by the common practice of administering cathartics in cases of abdominal pain in which the diagnosis is uncertain than in almost any other way. Incalculable harm results from indiscriminate catharsis.

No massage should be given to the abdomen for fear of causing a perforation or of spreading the infection. The patient should be kept in bed and kept quiet. No food should be administered by mouth for fear of causing intestinal peristalsis and thus increasing the peritonitis. No water should be allowed to be swallowed. Practically no water is absorbed directly from the stomach. The swallowing of water increases peristalsis. No morphia should be given until operation is decided upon or the diagnosis is made, for morphia will conceal symptoms. If there is vomiting, the stomach should be washed out with warm water. Neither food nor cathartics, nor morphia should be given to a patient suspected of having intestinal obstruction.

Ewald has recently called attention to an *early* symptom of intestinal obstruction. He says the stomach fills with intestinal contents very early in the obstruction, whether the obstruction is mechanical or non-mechanical. One can obtain through a stomach tube material with a strong feculent odor at a time when many serious symptoms have not appeared. The stomach lavage may be repeated several times a day, and a large amount of material obtained each time. I have not yet had opportunity to confirm these recent observations of Ewald. An early diagnosis of intestinal obstruction is not always possible, but it is *often* possible if the significance of abdomin-

al pain and vomiting without fever are duly considered.

Cases of intestinal obstruction are not common in any one man's experience. They are of rather infrequent occurrence.

Early diagnosis of acute intestinal obstruction permits early operative relief.

Early operation in these cases gives a low mortality, although, unfortunately, not always.

As a magnificent illustration of what an early diagnosis may accomplish in the diminution of the mortality of acute intestinal obstruction, note the remarkable experience recorded by Clubbe, in 1907, in cases of intussusception in infants. Clubbe has operated upon one hundred and twenty-four cases of intussusception in infancy. He has had but forty deaths, a mortality of thirty-two per cent. Clubbe's experience in his last twenty-four cases, with three deaths, or a mortality of twelve and one-half per cent, is phenomenal. The mortality in mixed statistics of intussusception is as high as fifty-two per cent. The reason for this splendid operative showing of Clubbe lies in the fact that the physicians about Sydney, Australia, where Clubbe practices, have come to recognize the meaning of the sudden screams of the child, the characteristic pallor and the vomiting. They have learned properly to interpret the *apparent* recovery from this acute onset and the recurring cries from peristaltic pain as a picture of acute intussusception and having learned to interpret this picture, operation has been done immediately with the resulting low mortality.

It is not necessary to determine the *form* of obstruction, whether by band or adhesion, by Meckel's diverticulum, etc. It is sufficient to have determined that there exists a serious intra-abdominal intestinal lesion which is operable. In the very nature of things, an infectious inflammatory process has certain well recognized earmarks which seem to distinguish it from a process purely mechanical.

However, and here lies the trouble, if the mechanical difficulty is permitted to run along for several days, then there is added to the picture the inflammatory framework. It is then almost impossible to distinguish the one process from the other. One may, from a clear history of the onset of the attack and its progress, make a definite diagnosis. Herein lies the wisdom of carefully considering the patient's story and weighing the evidence.

We should, all of us, continually carry in our mind's eye, the possible types or varieties of in-

testinal obstruction—from the acute pyloric stenosis of early infancy to the chronic obstruction from carcinoma in old age, which may give rise to sudden acute intestinal obstruction. There should be ever in mind the two great classes: (1) the non-mechanical—the distended paralyzed intestine associated with an acute infection. (2) The mechanical—the kinks and twists of coils held snugly against one another; the bands from *old* inflammatory processes; the intussusception of childhood; the volvulus of adult life. We should be familiar also with the pathological changes occurring in these various types of obstruction.

There is no disease the proper treatment of which depends more upon a true conception of the pathology than does intestinal obstruction.

The Operation.—The operation for intestinal obstruction should be early. The incision should be made in the median line below the umbilicus. In early *post-operative* ileus the incision had best be made through the clean abdominal wall so that the probable site of the obstruction may be reached directly and not through inflamed tissues. There is then less danger of infecting the clean peritoneum.

1. If the patient is very ill it may be wise to simply, by *local* anæsthesia, open the presenting distended loop and tie in a curved glass tube. This may relieve the immediate distension and allow gases and liquids to pass *by* what otherwise might become a permanent kink or twist. In such a case no attempt should be made to find the seat of the obstruction at the primary operation. These are desperate cases.

2. Upon opening the abdomen, in a case which will permit of more prolonged operation, the *collapsed* gut should be looked for and followed to the seat of the obstruction. It is difficult to handle distended intestine.

The band is first divided. The intestine above the obstruction, which is filled with bacterial and toxic products, virulently infectious, is then emptied of its contents.

The method suggested by Monks of Boston is the best for evacuating the intestinal contents. It is the threading the intestine upon a glass or metal tube. Several feet of intestine may in this manner be pulled up on to the tube and the contents removed.

If this method seems undesirable, then the intestine may be washed out in the way recently advocated by Monks, *i. e.*, opening the distended coil of gut, passing in a glass tube connected with a fountain of hot sterile salt solution, and

washing down an indefinite distance, opening below, reintroducing the tube and washing again; thus by two or three washings a large part of the intestinal tract may be rid of the harmful and toxic contents which are replaced by hot stimulating salt solution. The effect upon the individual is good, the pulse improves, the source of infection is removed and convalescence may be established.

3. If the situation is like the following there must be taken into account another factor. A boy, operated upon for acute appendicitis. Drainage is employed. Recovery. Four weeks subsequently acute intestinal obstruction occurs. At operation a loop of gut a foot and a half long is found constricted, but it is evidently viable. There are no gross evidences of peritonitis. The bowel is freed—washed and replaced within the abdomen. All is aseptically done.

Four days later, because of a persistence of symptoms, the abdomen is reopened; septic peritonitis is found, and subsequently death occurs.

An appreciation of the changes which had taken place in the wall of the gut would have precluded this accidental infection. The bowel might have been left in the wound or surrounded by gauze or even resected.

Here was an instance in which the gut was probably damaged enough to have demanded resection, but it was replaced and the infection occurred through the damaged gut wall.

4. If the gut is evidently dead and there is a thrombosis of the mesenteric vessels, the dead gut must be resected. More harm comes from resecting too little intestine in these cases than too much. It does not add to the shock of resection to resect a few inches more. Sound tissue is thus surely reached and the thrombosed mesenteric border is avoided. If the individual is too ill to make an immediate intestinal suture, after emptying the proximal gut thoroughly and flushing it out if wise, the two divided ends should be attached to glass tubes and drawn outside the abdominal incision or well into it after having caught together the mesenteric borders of the gut.

At an *early* date, four or five days later, when the patient has partly recovered from the initial shock, an anastomosis should be made. I have done several early anastomoses after first draining the bowel and they have behaved well. The abdominal wound and the intestine should be so left at the initial operation that the conditions will be most simple for the subsequent operative work of anastomosis with the least shock.

The amount of bowel which may be resected without harm to the individual is of interest in this connection.

Senn, in 1892, found from experiments, that resection of over one-third of the small intestine in dogs and cats led, sooner or later, to marasmus.

Trzebicky concluded that not over one-half of the small intestine could safely be resected.

Monari thought from his dog experiments that probably not over one-half of the human intestine could be resected with safety.

Storp concludes from a study of surgical cases recorded, and from his operative experience, that two-thirds of the intestine may be resected in man without fatal or deleterious result.

The *method of establishing an anastomosis* after resection, whether at the primary operation or at a secondary operation, is deserving of consideration. Hitherto it has been customary for surgeons to unite the small gut by lateral anastomosis after acute intestinal obstruction. I personally see no reason why this surgical custom should be perpetuated in all cases.

The technique of intestinal suture has now been reduced to thread and needle suture, and is so exact, rapid and satisfactory now that almost all rings and buttons have been eliminated (once called *adjuvants*) that there is no reason left for a lateral anastomosis, which is mechanically clumsy and attended by certain well recognized dangers. I believe that the lack of perfection in individual technique is largely responsible for the persistence of the old custom. Many cases in the series here reported and the records of many isolated instances confirm the truth of this opinion. If, therefore, there is no contraindication such as badly oedematous gut or greatly distended gut, I believe an end to end anastomosis is safer and preferable to a lateral anastomosis of the small intestine in cases of acute intestinal obstruction requiring resection.

With regard to the propriety of *any* one doing abdominal and intestinal surgery, this may be accepted as a truism. No individual should attempt to do this kind of surgery who has not experimented upon the living cat, dog or pig. No sane man will experiment upon a living human individual in intestinal or stomach surgery. Such human experimentation is criminal. Any individual who essays to do abdominal surgery should fit himself to meet the technical emergencies. Mature judgment in abdominal surgery comes with experience in human surgery only. Technical perfection any tyro can master. The ma

ture judgment *and* the technical perfection make the surgeon.

In certain cases of intestinal obstruction it has been found satisfactory to do a lateral anastomosis to short circuit the obstruction within the abdomen, without any other operative procedure; for example, in obstruction from irremovable malignant disease.

The true place for enterostomy, the making of a hole in the gut, has yet to be determined in mechanical intestinal obstruction. It has been done in many cases. Some have recovered; others have died. It is a question whether enterostomy drains a sufficient extent of bowel to be of real value. Monk's procedure of washing may be preferable in these desperate cases. It should be tried. Simple enterostomy at the time of operation with immediate closure of the intestinal opening is of little real value. An enterostomy tube left *in situ* drains a comparatively few intestinal loops.

The closure of fecal fistulæ, resulting from enterostomy is a problem of much interest. Fistulæ of the colon usually close spontaneously. Fistulæ of the small bowel rarely close without operative assistance.

The fifty to sixty per cent mortality of *post-operative intestinal* obstruction may be diminished if there is the minimum amount of handling of the gut, if absolute hemostasis is maintained, if asepsis is secured, if the parts operated upon are replaced so far as is practicable in their normal position, *i. e.*, the sigmoid carried to the pelvis, the omentum made to cover a drained area, the large bowel rather than small kept in contact with a drain. Never, if avoidable, should the small gut lie next a drain—adhesions of an obstructive character may form.

That temporary paralysis of the intestine occurs after undue handling, exposure to cold air, etc., has been demonstrated.

That permanent adhesions may occur we all know.

Abdominal drainage is less often indicated than was once thought. When wise it should be secured without the use of great masses of gauze. Tiny drains are best—a rubber tube containing a strand of gauze, gauze covered with rubber tissue, occasionally a glass tube may be employed.

Evisceration should be avoided.

A comfortable working incision is best employed. A small incision invites trauma in hand-

ling. The omentum should be placed beneath the abdominal incision before closing so as to avoid intestinal adhesions to the abdominal cicatrix.

The possibility of feculent vomiting or regurgitation should be guarded against during operation upon these desperately sick people by lavage of the stomach just previous to or immediately after etherization.

After operation these cases will demand very careful watching. Distension may be met by high, warm, rectal evacuating enemata—the use of calomel and lavage of the stomach. Morphia or codeine will often stop hiccough. Nutrient enemata may be employed if needed. Subpectoral salt solution will relieve thirst.

IN CONCLUSION

Our knowledge of intestinal obstruction is derived from various sources:

From the necropsy table of the anatomist;

From the bedside observations of the internist;

From animal experimental physiology;

From experimental physiological chemistry;

From experimental pathology and bacteriology, and last to be mentioned, but not the least important source of our knowledge of intestinal obstruction,

From the biopsy table of the surgeon.

We are all studying to-day *living* pathology and it is teaching us more than was *ever* dreamed of. *Every internist* should plan to *see* where the surgeon discovers the lesion and what that lesion proves to be.

The changes occurring in cases of acute intestinal obstruction are found to be dependent upon an interference with the fecal current and an interference with the intestinal vascular current, causing damage to the intestinal wall with a resulting general systemic infection or toxemia.

Intestinal obstructions are surgical lesions. The diagnosis should be made early, so that operation may be done before irreparable damage has occurred.

Operative procedures in these cases are directed to the relief of the local obstruction;

To the diminishing of shock by ridding the individual of poisonous intestinal contents, the source of infection;

To the early re-establishing the intestinal canal;

To the counteracting of the infection received;

To the closure of the fecal fistulæ;

To the closure of herniæ.

TRANSACTIONS OF THE SOUTH DAKOTA STATE MEDICAL ASSOCIATION

TWENTY-SEVENTH ANNUAL MEETING

1908

OFFICERS AND COMMITTEES

PRESIDENT

LEONARD C. MEAD, M. D.....Yankton

FIRST VICE-PRESIDENT

SAMUEL A. BROWN, M. D.....Sioux Falls

SECOND VICE-PRESIDENT

OSCAR R. WRIGHT, M. D.....Huron

SECRETARY-TREASURER

ROBERT D. ALWAY, M. D.....Aberdeen

MEMBER OF THE HOUSE OF DELEGATES OF THE A. M. A. ASSOCIATION

WM. GARDNER SMITH, M. D.....Sturgis

ALTERNATE

HENRY J. ROCK, M. D.....Aberdeen

COUNCILORS

CHARLES B. MALLERY, M. D.....Aberdeen

CHARLES J. LAVERY, M. D.....Ft. Pierre
EDWIN T. RAMSEY, M. D.....Clark
CHARLES F. CULVER, M. D.....Sioux Falls
FREDERICK W. FREYBERG, M. D.....Mitchell
ALONZO E. CLOUGH, M. D.....Madison
DANIEL L. SCANLAN, M. D.....Volga
CHENEY C. GROSS, M. D.....Yankton
FELIX E. ASHCROFT, M. D.....Deadwood

COMMITTEE ON PUBLICATION

ROBERT D. ALWAY, M. D.....Aberdeen
WILLIAM EDWARDS, M. D.....Bowdle
CHARLES B. MALLERY, M. D.....Aberdeen

COMMITTEE ON PUBLIC POLICY

FREDERICK A. SPOFFORD, M. D.....Flandreau
WILLIAM EDWARDS, M. D.....Bowdle
JOHN L. FOXTON, M. D.....Huron

COMMITTEE ON SCIENTIFIC WORK.

EDWIN L. PERKINS, M. D.....Sioux Falls
ELWIN F. REAMER, M. D.....Mitchell
ROBERT D. ALWAY, M. D.....Aberdeen

PROCEEDINGS OF THE HOUSE OF DELEGATES

THURSDAY, SEPT. 3, 1908

The House of Delegates convened at the Opera House at 11 o'clock a. m., and was called to order by the President, Dr. L. C. Mead.

On call of the roll by the Secretary, Dr. R. D. Alway, the following delegates responded:

First District—Dr. D. E. Arnold, Aberdeen.

Second District—Dr. J. B. Vaughn, Castlewood.

Third District—Dr. D. L. Scanlan, Volga.

Sixth District—Dr. F. W. Freyberg, Mitchell.

Eighth District—Dr. C. C. Gross, Yankton.

Ninth District—Drs. F. E. Ashcroft, Deadwood, and F. E. Walker, Hot Springs.

The Secretary-Treasurer, Dr. R. D. Alway, submitted the following report, showing the general condition of the Association:

REPORT OF THE SECRETARY-TREASURER.

To th President and House of Delegates:

The total paid membership of the Association is as follows: Aberdeen District 58, Watertown 25, Brookings 7, Huron 14, Madison 8, Mitchell 48, Sioux Falls 38, Yankton 44, Black Hills 34, making a total of 276. As there are about 650 licensed physicians in the state less than 45% belong to the Association.

The House of Delegates of the American Medical Association, of the session of 1907, passed a resolution requesting that all state associations that hold their annual meeting in the spring change the time to a date midway between their meeting and the A. M. A. meeting, which would be in the fall. I hope the House of Delegates will give this subject due consideration.

Your secretary had the pleasure of being present at the annual meeting of State Secretaries on the evening of June the first at Chicago. At that time permanent organization was effected and a constitution and by-laws adopted. The purpose of this organization is for the advancement of state Associations; its members

are state secretaries and editors*of state Journals and I predict that it will become one of the most important branches of the A. M. A.

Our contract with the Northwestern Lancet expired on July first, but the management kindly offered to continue sending the Journal to the members, with the understanding, that, should the Association renew the contract, it would date from July 1, 1908, and if it was not renewed there would be no liability on the part of the Association.

The amendment to enlarge the scientific committee comes up for final action at this meeting.

The terms of office of councilors in districts No. 2, 5, and 8, also Delegate and Alternate to the American Medical Association, terminate at this meeting and it will be necessary to elect their successors.

Our health laws are entirely inadequate and the appropriation is only sufficient for a county, let alone an entire state. Our Medical practice act, although a great improvement on the old act, needs several amendments. Both these bills should be framed so as to take it out of the hands of the politician. I understand that in the state of Kentucky the Governor fills the appointments on the board of health, which is also the examining board, from physicians recommended by the State Medical Association. I think South Dakota would be wise in copying this clause from its sister state. I think it is time that this Association appoint itself guardian of Medical legislation and at this meeting discuss the matter and instruct the proper committee to frame a new health bill and amendments to the Medical practice act to be presented to the coming legislature.

Respectfully submitted,

R. D. ALWAY, Secretary.

FINANCIAL STATEMENT.

Resources.

May 30, 1907, Balance on hand.....	\$823.87
June 1, 1907, Per capita dues, District No. 6	4.00
July 12, 1907, Per capita dues, District No. 9	2.00
July 17, 1907, Per capita dues, District No. 1	10.00
Aug. 18, 1907, Per capita dues, District No. 9	2.00
Sept. 19, 1907, Per capita dues, District No. 1	4.00
Sept. 20, 1907, Per capita dues, District No. 7	2.00
Nov. 30, 1907, Per capita dues, District No. 1	10.00
Dec. 11, 1907, Per capita dues, District No. 4	6.00
Dec. 15, 1907, Per capita dues, District No. 6	8.00
Dec. 15, 1907, Per capita dues, District No. 2	4.00
Dec. 20, 1907, Per capita dues, District No. 2	2.00
Jan. 18, 1908, Per capita dues, District No. 1	2.00
Apr. 22, 1908, Per capita dues, District No. 4	26.00
Apr. 29, 1908, Per capita dues, District No. 8	86.00
Apr. 30, 1908, Per capita dues, District No. 6	86.00
May 21, 1908, Per capita dues, District No. 2	44.00
May 22, 1908, Per capita dues, District No. 6	6.00
May 22, 1908, Per capita dues, District No. 7	66.00
May 27, 1908, Per capita dues, District No. 6	4.00
May 27, 1908, Per capita dues, District No. 9	65.45
May 29, 1908, Per capita dues, District No. 4	2.00
June 4, 1908, Per capita dues, District No. 7	6.00
June 20, 1908, Per capita dues, District No. 7	4.00
July 5, 1908, Per capita dues, District No. 5	16.00
July 7, 1908, Per capita dues, District No. 1	112.00
July 24, 1908, Per capita dues, District No. 3	14.00
Aug. 10, 1908, Per capita dues, District No. 8	2.00

Aug. 15, 1908, Per capita dues, District No. 2	6.00
Aug. 25, 1908, Per capita dues, District No. 1	4.00

Total\$1,429.32

Disbursements.

May 30, 1907, Warrant No. 13.....	\$25.00
May 30, 1907, Warrant No. 14.....	33.70
May 30, 1907, Warrant No. 15.....	30.10
May 30, 1907, Warrant No. 16.....	126.50
June 25, 1907, Warrant No. 1.....	18.00
June 25, 1907, Warrant No. 2.....	5.00
Aug. 26, 1907, Warrant No. 3.....	15.08
Aug. 26, 1907, Warrant No. 4.....	2.00
Sept. 10, 1907, Warrant No. 5.....	2.00
Oct. 10, 1907, Warrant No. 6.....	2.00
Dec. 15, 1907, Warrant No. 7.....	68.00
Jan. 9, 1908, Warrant No. 8.....	3.00
Feb. 8, 1908, Warrant No. 9.....	3.50
Mar. 21, 1908, Warrant No. 10.....	70.00
June 24, 1908, Warrant No. 11.....	5.00
June 26, 1908, Warrant No. 12.....	70.00
Aug. 17, 1908, Warrant No. 13.....	20.00
Balance, cash	867.85

Total\$1,429.32

Approved,

C. C. GROSS.

F. E. ASHCROFT.

J. B. VAUGHN.

Yankton, Sept. 2, 1908.

South Dakota State Medical Association, in account with R. D. Alway:

June 17, 1907, Postage	\$1.00
June 19, 1907, Express to the Lancet.....	.25
June 25, 1907, Postage	2.00
July 6, 1907, Stenographer	10.00
July 15, 1907, Postage	1.00
Aug. 20, 1907, Postage	1.00
Aug. 23, 1907, Express to A. M. A.....	.35
Aug. 27, 1907, Records A. M. A.....	.75
Oct. 11, 1907, Postage	2.00
Dec. 19, 1907, Repairing Seal	2.00
Dec. 21, 1907, Express to the Lancet.....	.25
Dec. 21, 1907, Postage	1.00
Jan. 8, 1908, Postage	1.00
Jan. 21, 1908, Postage	1.00
Mar. 30, 1908, Postage	2.00
June 9, 1908, Postage	2.00
June 30, 1908, Postage	2.00
July 20, 1908, Postage	2.00
Aug. 11, 1908, Postage	3.00
July 28 and 29, 1908, Telephone to Taylor, Huron and Hill at Watertown.....	1.05
Aug. 28, 1908, Telegraph Drs. McCormack and Taylor	1.00

Total\$36.65

On motion the report of the Secretary-Treasurer was accepted and referred to the auditing committee.

The President appointed as such committee, Drs. C. C. Gross of Yankton, F. E. Ashcroft of Deadwood and J. B. Vaughn of Castlewood, to report at the next meeting of the House of Delegates.

Dr. J. N. McCormack, who was present, was requested to tell the House of Delegates about the new constitution proposed for State Associations.

Dr. McCormack discussed the merits of the new constitution at some length.

After a discussion in regard to maintaining a State Medical Journal, it was moved by Dr. Arnold, seconded by Dr. Ashcroft, and carried, that the contract now existing with the NORTHWESTERN LANCET be renewed, providing that the South Dakota State Medical Association be given proper recognition upon the title page of that periodical.

Dr. R. D. Alway offered the new Constitution and By-Laws.

Moved by Dr. Ashcroft, seconded by Dr. Gross, and carried, that the President appoint a committee to report at the next annual session on the new Constitution.

The President announced that he would name such committee at the next meeting of the House of Delegates.

Meeting adjourned until Friday morning at 8:00 o'clock, A. M.

FRIDAY, SEPT. 4, 1908

The House of Delegates convened at the Opera House at 8:00 o'clock, A. M., and was called to order by the President, Dr. L. C. Mead.

On call of the roll by the Secretary, the following delegates responded:

First District—Drs. D. E. Arnold, Aberdeen, and Wm. Edwards, Bowdle.

Second District—Drs. J. B. Vaughn, Castlewood, and H. M. Freeburg, Watertown.

Third District—Dr. D. L. Scanlan, Volga.

Sixth District—Drs. F. W. Freyburg, Mitchell, and T. B. Smiley, Mt. Vernon.

Seventh District—Dr. J. G. Parsons, Sioux Falls.

Ninth District—Drs. F. E. Walker, Hot Springs, and F. E. Ashcroft, Deadwood.

Moved by Dr. Arnold, seconded by Dr. Ashcroft, and carried, that Dr. Alway, the Secretary, be appointed delegate to the next meeting of the American Medical Association.

Dr. Freyberg moved, seconded by Dr. Ashcroft, and carried, that the Association pay the entire expense of the delegate to the next meeting of the American Medical Association.

The Auditing Committee reported that the vouchers and report of the Secretary-Treasurer, Dr. R. D. Alway, were found to be correct and the same was accepted.

Dr. Scanlan moved, seconded by Dr. Ashcroft, and carried, that Dr. Alway's bill of expense and salary be allowed.

Dr. Edwards moved, seconded by Dr. Vaughn, and carried, that the Secretary, Dr. Alway, be paid \$150.00 for his services during the past year.

Dr. Edwards offered the following resolution:

Whereas, There exists to a greater or lesser degree, the practice by certain physicians of giving and receiving commissions on fees received for services rendered patients who have been referred by one physician to another, and

Whereas, Such practice is morally wrong, fraudulent and in violation of the confidence reposed in physicians by their patients,

Be It Resolved, That the giving or receiving of commissions on medical or surgical fees shall be considered grounds for expulsion from the Society of both parties.

The Secretary, Dr. Alway, moved that the resolution be received and placed upon the minutes. Dr. Parsons seconded the motion, and it was carried.

Dr. Alway offered a resolution prepared by the American Medical Association, requesting all Associations to hold their meetings in the fall.

It was moved by Dr. Freyberg, seconded by Dr. Walker, and carried, that the next annual session of this Association be held the first week in October.

It was moved by Dr. Ashcroft, seconded by Dr. Edwards, and carried, that the Committee on Public Policy and Legislation be instructed to make diligent effort to secure an adequate appropriation for the use of the State Board of Health, and that this Association be consulted about appointees on the State Board of Health.

It was moved by Dr. Ashcroft, seconded by Dr. Edwards, and carried, that the amendment to enlarge the Scientific Committee be accepted.

The President named the following Committee on Constitution and By-Laws: Dr. R. C. Warne of Mitchell, Dr. E. T. Ramsey of Clark, and Dr. C. B. Mallory of Aberdeen.

Dr. Arnold moved, seconded by Dr. Scanlan, and carried, that the House of Delegates allow the chair to appoint the Nominating Committee.

The President named the following as members of the Nominating Committee:

First District—Dr. D. E. Arnold, Aberdeen.

Second District—Dr. H. M. Freeburg, Watertown.

Third District—Dr. D. L. Scanlan, Volga.

Sixth District—Dr. F. W. Freyberg, Mitchell.

Seventh District—Dr. J. G. Parsons, Sioux Falls.

Eighth District—Dr. James Roane, Yankton.

Ninth District—Dr. F. E. Walker, Hot Springs.

The President named the following Committee on Necrology and Resolutions: Dr. J. G. Parsons, Sioux Falls; Dr. Wm. Edwards, Bowdle; and Dr. T. B. Smiley, Mt. Vernon.

Meeting adjourned until 2:30 o'clock, at the Hospital for the Insane.

FRIDAY, SEPTEMBER 4, 1908

The House of Delegates convened at the Hospital for the Insane at 2:30 o'clock p. m., and was called to order by the President.

On call of the roll by the Secretary, the following delegates responded:

First District—D. E. Arnold, Aberdeen; Wm. Edwards, Bowdle.

Second District—J. B. Vaughn, Castlewood; H. M. Freeburg, Watertown.

Third District—D. L. Scanlan, Volga.

Sixth District—T. B. Smiley, Mt. Vernon; F. W. Freyberg, Mitchell.

Eighth District—C. C. Gross, Yankton.

Ninth District—F. E. Ashcroft, Deadwood.

The Committee on Nominations reported as follows:

For President—S. A. Brown, Sioux Falls; W. R. Ball, Mitchell; and Wm. Edwards, Bowdle.

For First Vice-President—W. G. Smith, Sturgis.

For Second Vice-President—W. E. Moore, Tyndall.

For Councilors for the Second, Fifth and Eighth Districts, it was recommended that the Secretaries of the District Societies be nominated for Councilors; Second District, J. B. Vaughn, Castlewood; Fifth District, H. H. Frudenfeld, Madison; and Eighth District, L. F. Beall, Irene.

For Alternate to the American Medical Association—E. F. Reamer, Mitchell.

Dr. Edwards moved that the report of the Committee be adopted and the Committee discharged. Dr. Freeburg seconded the motion and it was carried.

Dr. Freyberg nominated Dr. T. B. Smiley as First Vice-President.

Dr. Ashcroft moved that the House of Delegates proceed to ballot for President and First Vice-President. Seconded by Dr. Gross, and carried.

Dr. Edwards announced to the House of Delegates that he was not a candidate for the office of President, and declined in favor of Dr. S. A. Brown of Sioux Falls.

Dr. Brown was elected President on ballot.

Dr. T. B. Smiley was elected First Vice-President on ballot.

Dr. Ashcroft presented Dr. Smith of Sturgis for Second Vice-President.

The House of Delegates then proceeded to ballot for Second Vice-President, and Dr. W. E. Moore of Tyndall, receiving a majority of the votes, was declared elected.

Dr. Arnold moved that the rules be suspended and that the Secretary be instructed to cast the vote of the delegates for the Secretaries of the local societies in the Second, Fifth and Eighth Districts to act as Councilors for those Districts for the ensuing three years. Seconded by Dr. Gross. Carried.

Dr. Arnold nominated Aberdeen as the place for holding the next annual meeting of this Association.

Dr. Ashcroft nominated Chamberlain as the place for holding the next meeting.

On ballot Aberdeen was selected as the next place of meeting.

Dr. Gross offered an amendment to Section 10, Chapter 4, headed "House of Delegates," so that the same will read: "When so organized, from the presidents and ex-presidents of such district societies, shall be chosen the vice-presidents of this Association."

Dr. Ashcroft moved that the amendment be accepted and laid upon the table for one day, as required by the By-Laws.

Dr. Ashcroft moved that the House of Delegates now proceed to consider the proposition of publishing the transactions of this meeting in pamphlet form.

Dr. Edwards moved that, in addition to the publication of the proceedings in THE NORTH-WESTERN LANCET, the Secretary be instructed to publish the proceedings of this meeting, including the program, list of physicians by counties in the state, a list of the District Medical Societies and their membership, a list of physicians in the public service, including all state and federal institutions, Indian Agencies and Indian Schools, and County Boards of Health. Dr. Ashcroft seconded the motion. Carried.

The Committee on Resolutions beg to submit the following:

Resolved, That the South Dakota State Medical Association hereby express their appreciation of the splendid entertainment and cordial treatment extended by the Eighth District Medical Society, and

To Dr. and Mrs. Mead for their many acts of kindness to the members and their wives, and for the instructive entertainment of the members of the Association at the South Dakota Hospital for the Insane, and

To the State Board of Charities and Corrections for their thoughtful and liberal courtesy in permitting the Medical profession of the State to inspect the State

Hospital for the Insane, and the excellent work done by Dr. Mead and his efficient staff, and

To the Physicians of Yankton and their wives for their kindly reception of the members of the Association and the entertainment of their wives.

J. G. PARSONS.
WM. EDWARDS.
T. B. SMILEY.

Dr. Ashcroft moved that the House of Delegates adjourn subject to call. Carried.

PROCEEDINGS OF THE BOARD OF COUNCILORS.

THURSDAY, SEPTEMBER 3, 1908

The Council convened at the Opera House at 12:00 M. Dr. Gross was chosen Chairman.

The Board of Councilors was called to order by the Chairman.

On call of the roll, the following Councilors responded:

Second District—Dr. J. B. Vaughn, Castlewood.

Third District—Dr. D. L. Scanlan, Volga.

Sixth District—Dr. F. W. Freyberg, Mitchell.

Eighth District—Dr. C. C. Gross, Yankton.

Ninth District—Dr. F. E. Ashcroft, Deadwood.

Then followed a discussion as to redistricting the counties of the state.

The matter of physicians practicing without a license, and as to whose duty it should be to prosecute such individuals, was taken up.

Motion was made to adjourn until Friday, September 4th, at 10 A. M., at the Opera House.

FRIDAY, SEPTEMBER 4, 1908

The Council convened at the Opera House at 10:00 o'clock A. M., and was called to order by Dr. Vaughn, acting as Chairman.

On call of the roll, the following Councilors responded:

First District—Dr. Wm. Edwards, Bowdle.

Second District—Dr. J. B. Vaughn, Castlewood.

Third District—Dr. D. L. Scanlan, Volga.

Sixth District—Dr. F. W. Freyberg, Mitchell.

Ninth District—Dr. F. E. Ashcroft, Deadwood.

Dr. Freyberg moved, seconded by Dr. Scanlan, and carried, that the matter of forming new districts be referred to the Secretary of the State Association.

Dr. Ashcroft nominated Dr. C. B. Mallery of Aberdeen for President of the Council for the ensuing year. Carried.

Dr. Freyberg nominated Dr. J. B. Vaughn of

Castlewood for Secretary of the Council for the ensuing year. Carried.

Dr. Freyberg moved to adjourn subject to call. Carried.

MISCELLANY

VACCINE FURNISHED THROUGH THE STATE BOARD OF HEALTH

The laws of Minnesota provide that the local boards of health shall see that those sick with "communicable diseases" (and this includes smallpox) are provided with all necessary medical assistance, medicines, etc. The people cared for are required to pay for such if possible; otherwise, the municipality (city, village or township) pays the necessary bills, recovering half the amount expended from the county later. Vaccine is the most important preventive agent in the treatment of smallpox. The law specifically requires that smallpox be properly treated and this is not possible without vaccine. Local authorities must furnish vaccine *free* if the people are too poor to pay for it.

Arrangements have been made with the Lederle Laboratories of New York City to keep the board supplied with vaccine. A specially low price has been made to boards of health. This vaccine comes in packages of two sizes, one containing ten tubes and the other three tubes. The price to boards of health is:

Lots less than 500—50c per package of 10 tubes,

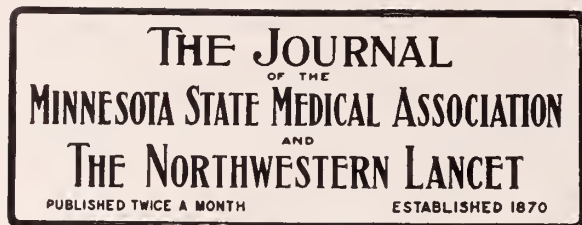
Lots between 500 and 1,000—45c per package of 10 tubes,

Lots over 1,000—40c per package of 10 tubes.

In any quantity—18c per package of 3 tubes.

The arrangement for the distribution of vaccine by the State Board of Health is as follows: Upon request made to the secretary of the State Board of Health he will at once send by mail or express prepaid the number of packages ordered. A statement will be sent to the person ordering the vaccine and a duplicate statement will at the same time be sent to the Lederle Laboratories. The latter will collect the amount due from the person ordering. The State Board of Health will receive no money and simply acts as a distributing agent for the purpose of saving time.

H. M. BRACKEN, M. D., Secretary.



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W. L. KLEIN, PUBLISHER

839-840 Lumber Exchange.....Minneapolis

OCTOBER 15, 1908

DR. J. B. MCGAUGHEY

When a great man like Dr. McGaughey dies his friends are startled and pause in sincere reverence to mourn his departure.

This sorrow is not fleeting, but extends over a long period. No one can adequately write of the virtues and characteristics of Dr. McGaughey unless he has been permitted to enjoy an intimate fellowship with the man.

Dr. McGaughey had many friends in the Northwest as well as in other sections of the country. Among medical men no one stood higher in ruggedness and honesty of purpose than did Dr. McGaughey. In a sense, he belonged to a select class of medical men. He had served in the Civil War, was honored and beloved, and was an ardent member of the Loyal Legion. He also was a medical man in its fullest meaning. His age and experience did not make him stale and old; he kept up with the march of progress and added daily to his store of knowledge. He was able to digest and assimilate the advances in medicine that are presumed to be possessed only by the younger graduate, but, unlike the younger man, he could bring all of his past experience and his superior judgment to aid him in the use of the latest methods in diagnosis. As a diagnostician he was an authority. His keenness of mind and his reasoning powers showed no decline at any period of his life.

The editor, who believes that he enjoyed Dr. McGaughey's confidence and friendship, does not hesitate to say again that the man who has passed away was one of the few who make up a typically select class of medical men.

Dr. McGaughey's death was a tremendous blow to Winona, where he had lived and practiced so many years. Old and young loved him for his loyalty, modesty, sympathy and skill. The Minnesota State Board of Health has lost one of its leaders. In this capacity he showed his earnestness and fidelity for the good of the public. The State Medical Association will miss his wholesome advice and his genial companionship.

To know Dr. McGaughey was to believe in him and to love him for all of his admirable qualities.

May the memory of him and his good works last through many generations.

THE INTERNATIONAL CONGRESS ON TUBERCULOSIS

The exhibit in Washington was one of the most stupendous educational institutions that was ever brought under one roof. This statement may seem exaggerated, but those who saw the World's Fair evidences of success of the war on tuberculosis will heartily agree that nothing has ever produced such a profound impression as that seen at the International Congress on Tuberculosis. Inspiring and stimulating imprints of the gathering of the delegates from all over the world will remain, but the educational value of the exhibits cannot be estimated in words. If the people throughout the United States could have an opportunity to study the practical models, charts, and pathological specimens, the interest awakened would be powerful enough to provide ways and means to stamp out tuberculosis within a few decades. People as a rule do not appreciate what is being done for their present and future welfare. This exhibit would not only make them reflect on the great work of physicians and sanitarians, but would open their purse-strings to keep the army against tuberculosis in continuous marching form.

One thing that impressed many observers was the uselessness of erecting monumental sanatoriums of costly models in stone when the simpler and less expensive buildings better answer the purpose. For instance, one state erected a building that cost approximately two thousand dollars a bed, but now provides equally good

quarters for a larger number of patients at the cost of one hundred and fifty to two hundred dollars a bed.

One other impressive fact was the interest shown in the maintenance of sanatoria for tuberculous patients by the laboring classes. The Typographical Union has a splendid plant in Colorado, where patients from any state in the Union may go, and the result is that 50 per cent of the incipient cases sent there recover. The laboring classes in Hartford, Conn., have raised a large sum of money by a self-imposed system of taxation, which is expended by sending the suspected case to a suitable place for treatment, rest and education, and at the same time paying his expenses while there, paying his family the usual wage earned by him, and thus preventing not only the discomforts and pauperization of the individual and his family, but the greater danger of multiple infection.

This scheme is vividly illustrated by charts showing the usual course: the stricken man arriving at the time when his consumption disqualifies him from work, the communication of this fact to his family, and the despairing outlook. The next picture shows a cheaper room in cheaper and more crowded quarters and the evidences of infection in the wife. The third picture shows the dying husband in squalid surroundings, his wife and child infected and utterly helpless. The end may be readily imagined. No more forceful lesson is presented anywhere than by these three drawings and the newspaper clipping showing what has been done to change all this in Hartford. The Gayford farm, with its substantial but inexpensive buildings, started by Dr. Foster of New Haven, gives further proof of what Connecticut has done.

New York, state and city, shows its extensive plants, its methods of reaching the people by large drawings illustrating the methods by which consumption is communicated from one person to another, and other drawings showing means for prevention. New York also has "phonographic" lectures spoken in simple, plain language wherein advice is given as to methods of communication and prevention. This is a good scheme, as the records can be varied and an occasional funny record inserted to amuse the audiences.

Minnesota made a good showing by photographs, drawings and charts clearly and plainly presented. This exhibit attracted much attention, but Minnesota has much to learn in respect

to more progressive methods and greater liberality from the people.

The Congress on the closing day was exceedingly interesting, as the delegates from all over the world spoke a word of praise and greeting. After this the President unexpectedly arrived and addressed the audience. He exhibited his appreciation of the work of the medical men who are working to exterminate communicable diseases of all kinds, and he was particularly gracious in his compliments and encouragement to the Congress.

The one dominant man at the Congress was Dr. Koch. He was there to defend his original theories, and he maintained in spite of powerful opposition that his ideas of the difference between bovine and human tubercle bacilli were correct. The resolutions introduced and adopted by the general committee did not uphold his contention. Evidently the majority were against him.

The Washington Post, in a very conservative editorial, reminded the Congress that Dr. Koch discovered the bacillus, and that, in spite of differences of opinion, he should be given full credit and consideration, and further that as the important question as to the different possibilities of the communicability of the bacillus was still in dispute, perhaps he was right, and it might be embarrassing in after years for his disputants to acknowledge the error. At all events, and in spite of the discussion, the Congress concluded to continue its war on tuberculosis of every source and kind, and to educate the people by every possible means.

The next meeting of the Congress will be held in Rome in 1911.

MEDICAL LEGISLATION

Some very important medical legislation came before the House of Delegates at the recent meeting of the State Medical Association—so important that it was deemed advisable to lay the whole matter over for another year, in order that all the members of the Association might have an opportunity for thorough study of the subject and for expression of opinion.

The special committee on medical defense reported fully on the experience of other states that have taken favorable action on this matter, and everywhere the plan has met entire success. The expense per capita has been slight, and the protection to individual physicians has been most satisfactory. The committee recom-

mends the adoption of a medical defense act by the Minnesota Association.

The special legislative committee recommended that all appointments by the Governor to the Board of Medical Examiners shall be from lists of nominees furnished by the State Medical Association, the Homeopathic State Medical Society, and the Eclectic Medical Society. Several changes are recommended in reference to the methods of examination and license, the most important being that which provides that after 1912 all applicants for license, graduating in that or subsequent years, must have had two full years of work in a recognized college before the study of medicine is begun.

Important amendments were also suggested to the act restricting practicing without a license, and the indiscriminate advertising of "guaranteed cures" with fuller provision for the prosecution of offenses against these acts. It is to be hoped that these very desirable amendments will meet the favor of physicians, legislators and the public.

CORRESPONDENCE

HE ALSO RAN

Minneapolis, Oct. 1, 1908.

TO THE EDITOR:

After reading your editorial on the "Political Uprising of the Physician," I thought it might be of some interest to you and your readers to hear direct from one of the aspirants for office and his experience.

Five weeks before the primaries it had not occurred to me to enter the contest for the office of Coroner of Hennepin County. After thinking the proposition over for a few days, and consulting some of my friends, who told me to keep out, I let go of \$10 at the County Auditor's office, the fee for filing my intention to run for office. After asking the clerk if this was all, he stated that it was, but that I would find it harder to get off than it was to get on the ticket. I afterwards found that he knew what he was talking about, for hardly had I reached my office before a solicitor was there wanting a write-up for a theater program.

From then on up to the day of the primaries there was something doing. For a dull time in the year, I can say I was very busy. It was my intention to conduct a clean campaign, without

much advertising, and consequently I turned down one paper after another that wanted to advertise me. When a write-up did appear in a paper, because the reporter got things somewhat mixed, I was called down by one of the other candidates. Then the report was started by one of the other candidates that I was simply in the field to split the vote. Let me say in this connection that I was not approached by anybody asking me to file for the nomination. It was simply my desire to get into the game and find out what it was like, and I think I found out.

I was besieged by all kinds and conditions of men who could do me a great deal of good (for pay). One woman requested me to send a check for some tickets, and my name would be mentioned to about 200 wives of voters. I replied that I was not buying votes, but they count in the total just the same.

I might go on and state many other kinds of graft which the good people try to work on the candidate, but it is enough to say that there is plenty of it.

One may be the choice of the people, but under present conditions money does the work, and for a physician to spend half the salary of an office to get the nomination is not right, and he must overstep the bounds of decency and principle when he attempts to advertise to that extent.

C. D. HARRINGTON, M. D.

NEWS ITEMS

Dr. Ekrem has moved from Minot, N. D., to Mobridge, S. D.

Dr. A. A. Flaten has moved from Grafton, N. D., to Edinburg, N. D.

Dr. P. H. Muus has sold his practice at Kensington and has located at Albert Lea.

Dr. B. W. Bray, of Biwabik, was badly injured in a collision the night of Sept. 19.

Dr. G. H. Richards has removed from Westington Springs, S. D., to Mitchell, S. D.

Dr. William H. Rumpf, of Faribault, has returned from a two months' trip to Europe.

Dr. E. M. Jones has been appointed Assistant City and County Physician at St. Paul.

The corner-stone of the new St. Luke's Hospital building at Faribault was laid last month.

Dr. John C. Koch, of Blackduck, was married on Sept. 22 to Miss Minnie Bissbee, of Duluth.

Dr. David A. Kirk, of Le Sueur, who has retired from active practice, will live in Minneapolis.

Dr. G. I. Kheralla, of Lake Preston, S. D., was recently married to Miss Griewisch, of Chicago.

St. Raphael's Hospital at St. Cloud has recently decided to establish a nurses' training school.

Dr. G. W. Nichols, who formerly practiced at Milaca and Hinckley, died last month in California.

Dr. Oscar F. Thomas, of Lakeland, was recently married to Mrs. Anna Hazel Mann, of the same place.

Dr. Peter J. Cress, of Rose Creek, was recently married to Miss Grace L. Conan, of the same place.

Mrs. W. C. Chambers, wife of Dr. Chambers, of Blue Earth, died recently, following an operation for appendicitis.

Dr. Williamson, of Winnipeg, has formed a partnership with Drs. Wheeler and Campbell, of Grand Forks, N. D.

Dr. Magnusson, of Clinton, has announced his intention of moving to Minneapolis to pursue the practice of medicine.

Dr. J. H. Owings, of Livingston, Mont., died last month at the age of 67. He was a prominent man in Montana for over twenty-five years.

Dr. Harry R. Hummer, of Washington, D. C., has been appointed superintendent of the Indian Hospital at Canton, S. D., succeeding Dr. O. S. Gifford.

Dr. Arthur N. Collins, who for the past two years has been associated with the Mayos at Rochester, has formed a partnership with Dr. Lewis, of Austin.

Dr. William Thorne, recently of Covina, Cal., but for many years a prominent practitioner at Hastings, in this state, died recently in Covina at the age of 89 years.

The school directors of the city of Minneapolis have recently asked the Board of Tax Levy for \$10,000 for the purpose of instituting medical inspection in the public schools.

Dillon, Mont., is shortly to have a \$40,000

hospital, given by the late Joseph Shineberger. The hospital will have an endowment of \$50,000 to provide for running expenses.

A site has been purchased for a sanatorium at Shakopee. Dr. H. P. Fischer, of Shakopee; Dr. T. M. Larsen, of Jordan, and Dr. F. W. Goodrich, of Jordan, are the promoters.

Dr. A. B. Ancker, of St. Paul, was elected vice-president of the American Hospital Association, which held its annual meeting last month in Toronto. The association will meet next year in Washington.

The attendance this year in the medical department of the State University will be the largest in the history of the department, owing to the absorption of Hamline. Probably over 250 students will be registered.

The German Lutheran Hospital Association, at Mankato, will shortly add a four-story addition to their plant. The new portion will provide room for thirty-three private patients, as well as a home for nurses.

Duluth has recently purchased land on the high bluff above Point of Rocks, on which to build a hospital for contagious diseases. Plans for the institution have been prepared, and the money is already available for construction.

The Minnesota State Medical Association met in St. Paul last week. The following officers were elected for the current year: President, Dr. Cornelius Williams, St. Paul; first vice-president, Dr. C. W. Moore, Eveleth; second vice-president, Dr. W. L. Wayland, Faribault; third vice-president, Dr. L. C. Weeks, Detroit; secretary, Dr. Thomas McDavitt, St. Paul; treasurer, Dr. R. J. Hill, Minneapolis. The full report of the meeting will appear in our next issue.

Dr. James Brown McGaughey, of Winona, died of heart disease on Sept. 27, at the age of 68. An appreciation of this distinguished and lovable physician appears in our editorial columns, and a fuller obituary will appear in our next issue in the necrological report of the Minnesota State Medical Association. The press of Winona gives extended space to the life and work of Dr. McGaughey, and many resolutions of respect were passed by the organizations, medical and otherwise, to which he belonged.

Dr. Frank W. Epley, a prominent physician of New Richmond, Wis., was recently found

FOR THE MONTH OF JULY, 1908

[illegible]

REPORTED FROM 65 VILLAGES HAVING A POPULATION OF 1,000 OR UPWARDS
FOR THE MONTH OF JULY, 1908

VILLAGES	Population of U. S. Census of 1900	Population of State Census of 1905	Total Deaths	Tuberculosis of Lungs	Other Forms of Tuberculosis	Pneumonia	Bronchitis	Diphtheria	Scarlet Fever	Measles	Smallpox	Whooping Cough	Cerebrospinal Meningitis	Typhoid Fever	Diarrheal Dis- eases of Children	Cancer	Puerperal Septicemia
Ada.....	1,253	1,515	0	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Adrian.....	1,258	1,184	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Aitkin.....	1,719	1,896	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Akeley.....		1,636	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Alexandria.....	2,681	3,051	5	.	1	.	.	.	.	.	.	.	.	.	.	.	.
Appleton.....	1,184	1,321	0	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Belle Plaine.....	1,121	1,301	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Benson.....	1,525	1,766	5	1	.	.	.	.	.	.	.	.	.	.	.	.	.
Breckenridge.....	1,282	1,850	5	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Buffalo.....	1,040	1,124	0	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Caledonia.....	1,175	1,405	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Canby.....	1,100	1,505	1	.	.	.	.	.	.	.	.	.	.	1	.	1	.
Cannon Falls.....	1,239	1,460	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cass Lake.....	546	1,062	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Chisholm.....		4,231	8	1	.	.	.	2	.	.	.	.	1	.	.	.	.
Clason.....	962	1,056	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Delano.....	967	1,023	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Fosston.....	864	1,000	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Frazee.....	1,000	1,146	1	.	.	.	1	.	.	.	.	.	.	.	.	.	.
Glencoe.....	1,780	1,805	4	.	.	2	.	.	.	.	.	.	.	.	.	1	.
Glenwood.....	1,116	1,718	0	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Graceville.....	856	1,032	0	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Grand Rapids.....	1,428	2,055	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Hallock.....	805	1,014	0	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Hibbing.....	2,481	6,566	14	.	.	3	.	1	.	.	.	.	.	.	.	2	.
Jackson.....	1,756	1,776	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Janesville.....	1,254	1,205	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Kasson.....	1,112	1,049	3	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Kenyon.....	1,202	1,252	0	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Lake Crystal.....	1,215	1,231	0	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Lanesboro.....	1,102	1,041	0	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Long Prairie.....	1,385	1,256	0	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Madelia.....	1,272	1,290	0	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Milaca.....	1,204	1,319	0	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Mountain Lake.....	959	1,063	0	.	.	.	.	.	.	.	.	.	.	.	.	.	.
North Mankato.....	939	1,129	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.
North St. Paul.....	1,110	1,400	0	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Olivia.....	970	1,019	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Osakis.....	917	1,056	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Park Rapids.....	1,313	1,719	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Pelican Rapids.....	1,033	1,095	0	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Perham.....	1,182	1,366	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Pine City.....	993	1,092	2	.	.	1	.	.	.	.	.	.	.	.	.	.	.
Plainview.....	1,033	1,140	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Preston.....	1,278	1,320	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Princeton.....	1,319	1,704	0	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Rush City.....	987	1,041	0	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Rushford.....	1,062	1,040	0	.	.	.	.	.	.	.	.	.	.	.	.	.	.
St. Louis Park.....	1,325	1,491	0	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Sandstone.....	1,189	1,589	0	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Sauk Rapids.....	1,391	1,552	0	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Scanlon.....		1,122	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.
South Stillwater.....	1,422	1,572	0	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Springfield.....	1,511	1,546	0	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Spring Valley.....	1,770	1,573	3	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Staples.....	1,504	2,163	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Two Harbors.....	3,278	4,402	6	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Wadena.....	1,520	1,868	0	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Wells.....	2,017	1,814	0	.	.	.	.	.	.	.	.	.	.	.	.	.	.
West Minneapolis.....	2,250	2,530	2	1	.	.	.	.	.	.	.	.	.	.	.	.	.
Wheaton.....	1,132	1,346	2	.	.	.	.	.	.	.	.	.	1	.	.	.	.
White Bear Lake.....	1,288	1,724	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Winebago City.....	1,816	1,553	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Winthrop.....	813	1,031	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Zumbrota.....	1,119	1,129	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.
State Institutions.....			26	4	.	.	.	1	.	.	.	.	.	.	.	.	.
Other parts of State.....	1,012,328	1,085,886	579	55	11	18	2	13	2	1	...	6	4	7	14	49	1
Total for State.....	1,751,395	1,979,658	1334	118	26	57	6	30	5	2	...	9	16	26	45	95	5

THE JOURNAL OF THE MINNESOTA STATE MEDICAL ASSOCIATION AND THE NORTHWESTERN LANCET

VOL. XXVIII

NOVEMBER 1, 1908

No. 21

TRANSACTIONS OF THE MINNESOTA STATE MEDICAL ASSOCIATION

FORTIETH ANNUAL MEETING

1908

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Roster of the House of Delegates

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Blue Earth County.....	J. W. Andrews.....	Mankato
Blue Earth Valley	No report	
Brown-Redwood	G. F. Reineke.....	Redwood Falls
Camp Release	D. N. Jones.....	Gaylord
Camp Release	Ward Z. Flower.....	Gibbon
Central Minnesota	Charles Swenson	Braham
Chisago-Pine	H. P. Dredge.....	Sandstone
Clay-Becker	Wm. J. Awty.....	Moorhead
Dodge	E. E. Harrison.....	West Concord
Freeborn	O. A. Burton.....	Albert Lea
Goodhue	J. V. Anderson.....	Red Wing
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Hennepin	A. E. Benjamin.....	Minneapolis
Hennepin	W. A. Hall.....	Minneapolis
Hennepin	Geo. O. Eitel.....	Minneapolis
Hennepin	J. E. Moore.....	Minneapolis
Hennepin	L. A. Nippert.....	Minneapolis
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Kandiyohi-Swift	G. L. Scofield.....	Benson
Lyon-Lincoln	B. C. Knudson.....	Tyler
McLeod	C. W. Tinker.....	Stewart
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Mower	F. W. Schultz.....	Waltham
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Ramsey	Wm. Davis.....	St. Paul
Ramsey	Warren A. Dennis.....	St. Paul
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St. Louis	J. B. Weston.....	Duluth
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Watonwan	J. W. McCarthy.....	Madelia
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	H. E. Cassell.....	Litchfield
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	A. C. Taylor.....	Duluth
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	O. C. Trace.....	Little Falls
	W. J. Cochrane.....	Lake City
	J. F. Lynn.....	Waseca
	W. R. Humphrey.....	Stillwater
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	B. M. Randall.....	Graceville
	C. P. Robbins.....	Winona
	Carl L. Larsen.....	Buffalo

Place of Next Meeting

WINONA

October 6 and 7, 1909

Proceedings

OF

The House of Delegates

FIRST SESSION, TUESDAY, OCTOBER 6,
1908

The first session of the House of Delegates was called to order by the President, Dr. W. H. Magie, at 2 o'clock, in the House chamber of the old state capitol, St. Paul.

On motion of Dr. A. J. Braden, the minutes of the previous annual meeting as published in THE JOURNAL were considered the official record and approved.

On motion of Dr. Isaac Lemieux, the chair was instructed to appoint a committee of two on credentials.

The chair appointed as such committee Dr. A. E. Spalding, of Luverne, and Dr. W. A. Hall, of Minneapolis.

After a short recess the Committee on Credentials submitted the following report:

REPORT OF COMMITTEE ON CREDENTIALS

Your committee has examined the credentials submitted and find the following entitled to be seated as accredited delegates:

Delegates.	Society.
J. W. Andrews, Mankato.....	Blue Earth County
D. N. Jones, Gaylord.....	Camp Release District
Ward Z. Flower, Gibbon.....	
Chas. Swenson, Braham.....	Central Minn. District
H. P. Dredge, Sandstone.....	Chisago-Pine
Wm. J. Awty, Moorhead.....	Clay-Becker
E. E. Harrison, West Concord.....	Dodge
J. W. Bell, Minneapolis.....	Hennepin
W. A. Hall, Minneapolis.....	
Geo. G. Eitel, Minneapolis.....	
Wm. R. Murray, Mpls. (Alternate)	
L. A. Nippert, Minneapolis.....	
J. T. Dunn, Wyckoff.....	Houston-Filmore
J. W. Robertson, Litchfield.....	Meeker
F. W. Schultz, Waltham.....	Mower
H. A. Tomlinson, St. Peter.....	Nicollet
C. H. Mayo, Rochester.....	Olmsted
O. M. Haugen, Fergus Falls.....	Park Region Dist. and County
Wm. Davis, St. Paul.....	Ramsey
Warren A. Dennis, St. Paul.....	
E. F. Geer, St. Paul.....	
C. L. Greene.....	
Israel Lemieux, Red Lake Falls...	Red River Valley
F. U. Davis, Faribault.....	Rice
A. J. Braden, Duluth.....	St. Louis
J. M. Robinson, Duluth.....	
J. B. Weston, Duluth.....	
Edward E. Novac, New Prague.....	Scott-Carver
C. C. May, Adrian.....	Southwestern
C. B. Lewis, St. Cloud.....	Stearns-Benton
Francis M. Smersh, Owatonna.....	Steele
Wm. Reid, Deerwood.....	Upper Mississippi
W. T. Adams, Elgin.....	Wabasha
H. C. Blanchard, Waseca.....	Waseca
A. H. Steen, Cottage Grove.....	Washington
J. W. McCarthy, Madelia.....	Watonwan
F. H. Rollins, St. Charles.....	Winona

(Signed)

A. E. SPALDING, W. A. HALL.

Committee.

On motion of Dr. C. H. Mayo, the report of the committee was unanimously adopted.

At a later session, in a supplementary report, the following additional delegates were seated:

Paul B. Cook, as alternate for Dr. E. F. Geer, St. Paul, representing the Ramsey County Society.

Dr. W. L. Beebe, St. Cloud, representing the Stearns-Benton County Society.

The President: We will now listen to the report of the Secretary.

REPORT OF THE SECRETARY

THOS. McDAVITT, M. D.

Mr. President:

The Secretary has to report a membership to date of 1,217, as against a membership of 1,159 last year.

According to the action of the House of Delegates at the last annual meeting, the Secretary was bonded in the sum of one thousand dollars. The Secretary also carried out instructions in regard to securing reports from the various county societies, and they have been coming in with great regularity. They have reported the attendance better than in the previous year and have increased the membership, as stated, to 1,217.

The Council had a special meeting in December, all members present. At that time the Council fixed the time for the annual meeting in October.

Dr. Wm. Davis, having been elected a Councillor at the Duluth meeting, promptly admitted his ineligibility, and Dr. Fullerton held over until his successor was elected and installed.

On motion of Dr. W. A. Hall, the report of the Secretary was adopted and ordered placed on file.

The President: We will now listen to the Treasurer's report.

The Secretary: Our Treasurer, Dr. Hill, who has served us faithfully so many years, is quite ill and has been confined to his bed for some time. His surgeon would not permit him to come out, but he has sent in his usual full and detailed report. If there is no objection, I will not read the detailed report, but only the substance of it.

TREASURER'S REPORT

R. J. HILL, M. D.

Dr. R. J. Hill, Treasurer, in account with the Minnesota State Medical Association
1907 Dr.

To balance on hand, June 1, 1907 \$3,636.08
June 12 Hennepin County 2.00

12	Kandiyohi-Swift	2.00	25	Rice County Society.....	44.00
14	Upper Mississippi Medical So-		25	St. Louis County Society.....	38.00
	ciety	2.00	25	Hennepin County Society.....	482.00
22	St. Louis County.....	12.00	25	Wright County Society.....	4.00
26	Ramsey County	20.00	25	Red River Valley Society.....	46.00
26	Camp Release	2.00	25	Kandiyohi-Swift Society	22.00
26	Blue Earth County Society.....	2.00	25	Meeker County Society.....	16.00
28	Red River Valley Society.....	2.00	25	West Central Society.....	28.00
July 3	Houston-Fillmore Society.....	8.00	25	Chisago-Pine Society	2.00
5	Red River Valley Society.....	2.00	25	Mower County Society.....	40.00
5	West Central Society.....	2.00	25	Stearns-Benton Society	2.00
8	Houston-Fillmore Society.....	2.00	May 15	Camp Release Society, additional	10.00
15	Camp Release Society.....	2.00	15	Blue Earth Valley Society, addi-	
18	Blue Earth Valley Society.....	4.00		tional	4.00
19	Upper Miss. Valley Society.....	2.00	15	Brown-Redwood Society, addi-	
23	Camp Release	2.00		tional	2.00
Aug. 6	Lyon-Lincoln County	2.00	15	Olmsted County Society, addi-	
6	McLeod County	2.00		tional	4.00
7	Olmsted County	2.00	15	McLeod County Society, addi-	
8	Scott-Carver County	2.00		tional	4.00
Sept. 6	Red River Valley Society.....	2.00	15	West Central Society, additional	10.00
6	Brown-Redwood Society	2.00	15	Meeker County Society, addi-	
18	Blue Earth Valley Society.....	2.00		tional	2.00
23	Hennepin County Society.....	2.00	15	Houston-Fillmore Society, addi-	
25	Hennepin County Society.....	2.00		tional	6.00
28	Hennepin County Society.....	2.00	15	Hennepin County Society, addi-	
Oct. 3	Hennepin County Society.....	2.00		tional	18.00
11	Park Region Society.....	2.00	15	St. Louis County Society, addi-	
Nov. 9	Hennepin County Society.....	4.00		tional	22.00
Sept. 25	Lyon-Lincoln (failed to credit)..	2.00	15	Goodhue County. Society, addi-	
Dec. 12	Blue Earth Valley Society.....	2.00		tional	6.00
1908			15	Red River Valley Society, addi-	
Jan. 21	Goodhue County Society.....	22.00		tional	12.00
21	Blue Earth Society.....	4.00	15	Central Minnesota Society, addi-	
Feb. 20	St. Louis Society.....	10.00		tional	2.00
20	Lyon-Lincoln Society.....	24.00	27	Camp Release Society.....	4.00
29	St. Louis Society.....	126.00	27	McLeod County Society.....	2.00
29	Blue Earth Valley Society.....	22.00	27	Olmsted County Society.....	2.00
Mar. 7	Wabasha Society	32.00	27	Aitkin County Society.....	2.00
7	Clay-Becker Society	34.00	27	Houston-Fillmore Society	8.00
17	Stearns-Benton Society.....	61.00			
17	Scott-Carver Society	18.00		Total receipts to June 1, 1908...	\$6,076.08
17	Blue Earth Valley Society.....	2.00		Total expenditures to June 1, 1908	2,184.81
23	Ramsey County Society.....	310.00			
24	Southwestern Society	76.00		Balance on hand June 1, 1908...	\$3,891.27
24	Waseca County Society.....	24.00		Dues collected during change	
24	Clay-Becker Society, additional..	10.00		(reorganization)	624.93
25	Nicollet County Society.....	32.00			
Apr. 1	Scott-Carver Society	10.00		Total balance on hand.....	\$4,516.20
1	Upper Mississippi Society.....	64.00	Dr. R. J. Hill, Treasurer, in account with the min-		
1	Goodhue Society	2.00	nesota State Medical Association		
1	Washington Society	36.00	1907		
1	Dodge County Society.....	18.00	June 26	Peters & Baley, 100 envelopes,	
1	Camp Release Society.....	86.00		Secretary	13.00
1	Steele County Society.....	22.00	July 3	Inga Thorson, stenog. Secretary.	10.00
1	Wright County Society.....	16.00	3	W. A. Jones, president Lancet	
1	Park Region Society.....	62.00		Co.	93.30
1	Chisago-Pine Society	22.00	8	H. A. Tomlinson, expense prog-	
1	Winona Society	52.00		ram Com.....	2.90
1	Brown-Redwood Society.....	44.00	13	Peters & Baley, programs. 1,500.	9.50
2	Blue Earth County Society.....	62.00	Aug. 2	Inga Thorson, stenog. Secretary	8.00
2	Olmsted County Society.....	50.00	2	W. A. Jones, pres. Lancet Co...	95.58
2	Freeborn County Society.....	20.00	Sept. 6	W. A. Jones, pres. Lancet Co...	96.59
2	Houston-Fillmore Society	30.00	6	S. H. Boyer, program committee	11.50
2	Chisago-Pine Society	2.00	6	H. J. O'Brien, program commit-	
2	Blue Earth Valley Society.....	6.00		tee	12.50
2	Aitkin County Society.....	10.00	6	St. Louis Button Co., badges...	29.50
25	Watsonwan County Society.....	10.00	6	Consolidated Stamp Co., ribbon	
25	Central Minnesota Society.....	10.00		badges	3.15
25	Freeborn County Society.....	2.00	6	Consolidated Stamp Co., 100 rib-	
25	Blue Earth Valley Society.....	6.00		bon badges	10.00
25	McLeod County Society.....	28.00	6	F. A. Knights, Councilor expense	29.00
25	Camp Release Society.....	4.00	6	U. S. Fidel. & Guar. Co., Treas.	
25	Goodhue County Society.....	6.00		bond	17.50
25	Blue Earth County Society.....	2.00	6	Clara Torgerson, stenog. Sec'y..	4.00

	6	A. G. Long, stenog. at meeting..	75.00
	7	A. G. Long, bal. as per bill.....	169.58
	14	Security Bank, take up check Lyon-Linc.	2.00
	19	Peters & Baley, reprint letter- heads, Secretary	1.25
	25	W. A. Jones, president Lancet, part payment	75.00
Oct.	3	Clara Torgerson, stenog. Sec'y..	10.00
	3	W. A. Jones, president Lancet, bal. Sept.....	21.67
Nov.	2	W. A. Jones, president Lancet Co.	96.67
	2	Clara Torgerson, stenog. Sec'y..	8.00
	9	Thos. McDavitt, exp. visit Red River Valley	17.70
Dec.	3	W. A. Jones, president Lancet Co.	96.67
	3	Clara Torgerson, stenog. Sec'y..	8.00
	20	W. A. Jones, president Lancet Co.	97.41
	30	C. F. McComb, Legislative Com- mittee	50.00
	30	O'Brien & Albrecht, atty's opin- ion	10.00
	30	Peters & Baley, blanks Sec'y....	2.75
1908			
Jan.	4	Clara Torgerson, stenog. Sec'y..	10.00
Feb.	3	Clara Torgerson, stenog. Sec'y..	8.00
	3	W. A. Jones, president Lancet Co.	97.41
	11	Peters & Baley, 1,000 2c stamped envelopes	23.85
	11	Brown-Treacy Co., letter file, Sec'y .....	.50
Mar.	3	Clara Torgerson, stenog. Sec'y..	8.00
Apr.	1	W. A. Jones, president Lancet Co.	97.41
	1	J. A. Nowell Co., Sec'y's bond...	5.00
	1	Clara Torgerson, stenog. Sec'y..	10.00
	1	Thos. McDavitt, Sec'y incidentals	10.00
May	1	W. A. Jones, president Lancet Co.	97.41
	1	Clara Torgerson, stenog. Sec'y..	8.00
	15	Hennepin Co., paid twice (A. C. Smith)	2.00
	15	Hennepin Co., paid twice (W. F. Braash)	2.00
	20	Hotel Ryan, ex. Com. Rev. Med. Law	16.25
	27	Thos. McDavitt, sal. Sec'y to June 1, 1908	300.00
	27	R. J. Hill, sal. Treas. to June 1, 1908	100.00
	27	W. A. Jones, president Lancet Co.	94.35
	27	Clara Torgerson, stenog. Sec'y..	8.00
	28	Luella Fiening, stenog. Treas. report	1.50
			<hr/> \$2,184.81

On motion of Dr. H. A. Tomlinson, the report of the Treasurer was adopted and ordered placed on file.

Dr. Wm. Davis: Should not this go to a committee to be audited?

The Secretary: This has been before the Council and has already been audited.

On motion of Dr. Thos. McDavitt, the report of the Committee on Scientific Work was dispensed with in the absence of the chairman, Dr. Rogers.

The President: We will now listen to the report of the Committee on Arrangements.

REPORT OF COMMITTEE ON ARRANGEMENTS

I want to say at the beginning that the report will be a short one.

Arrangements have been made for the meetings to be held in this room. The old Senate chamber has been given over to the exhibits. The meeting-place for the House of Delegates will be announced tomorrow morning at the general meeting. It was expected that we could use the Governor's office for that purpose, and it was promised, but it was found a few days ago that the Board of Medical Examiners would have to use that room, and we shall have to put up with smaller quarters. There is a good room adjoining the exhibit room which can be used.

The committee also wishes to announce that the members of the Association will be entertained by the Ramsey County Medical Association tomorrow night at the Auditorium at a "smoke social." The men can sit around and smoke and talk, and there will also be some entertainment provided. It is hoped that everybody will be present and that all will have a good time. The button will serve as a ticket of admission.

(Signed) WARREN A. DENNIS,
Chairman.

The President: We will now have the report of the Committee on the Revision of the State Medical Laws, of which committee, I believe, Dr. Andrews is chairman.

Dr. J. W. Andrews: Mr. President, do I understand you want the report at this time?

The President: That is what the Secretary says.

Dr. J. W. Andrews: Mr. President and Gentlemen: After spending considerable time and consulting competent attorneys in regard to the revision of the Medical Act, your committee had a meeting at the Ryan Hotel in this city and framed the following proposed changes. We have had the proposed laws printed, and I will have copies passed to the delegates so that we need not go through with the reading, which would be tedious and unnecessary at this time. It will say, however, it is not as easy a matter to prepare a bill regulating the practice of medicine as one would think before beginning the work.

The bill as first prepared by the committee provided that no one could practice medicine in the state of Minnesota except he had passed an

examination in the different branches of medicine and surgery which were named, and that all were to pass the same examination, and that anyone not passing such an examination would be regarded as an illegal practitioner. It was after considerable discussion that the committee felt that to put the subject up to the Legislature in that form would probably defeat the object of the bill, for it would at once disqualify every osteopath practicing in the state at this time, and that probably would defeat the bill. Upon the recommendation of Dr. Wm. Davis that clause was eliminated. The bill remains otherwise very much as the committee prepared it.

You will observe in looking over the copies of this bill that the matter contained in the old bill is printed in common type, while the new matter is printed in italics.

I think this is all the report I need to make in regard to the subject at this time. I would like to have a copy of the bill in the hands of each delegate, and I do not know but what it would be wise to consider this matter in conjunction with the general session of the State Medical Association. However, that will be a matter for the House of Delegates to determine.

A BILL FOR AN ACT AMENDING SECTIONS 2295, 2296, AND 2300 OF CHAPTER 35 OF THE REVISED LAWS OF MINNESOTA FOR THE YEAR 1905, RELATING TO THE REGULATION OF THE PRACTICE OF MEDICINE AND SURGERY AND THE LICENSING OF PHYSICIANS AND SURGEONS

Be it enacted by the Legislature of the State of Minnesota:

Section 1. That Section 2295 of Chapter 35 of the Revised Laws of Minnesota for the year 1905, be, and the same hereby is, amended so as to read as follows:

Sec. 2295. **BOARD OF MEDICAL EXAMINERS**—The state board of medical examiners shall consist of nine qualified resident physicians, appointed by the governor each for a term of three years and until his successor qualifies. No member thereof shall serve for more than two successive terms, nor shall any instructor or person financially interested in a medical school be appointed thereto; and it shall at all times include three homeopathic physicians. Vacancies shall be filled by like appointments for the unexpired term. *All appointments shall be made from lists of nominees furnished by the Minnesota state medical society, the homeopathic state medical society, and the eclectic medical society, said lists to contain the names of three nominees for each appointment to be made.* The board shall elect from among their number a president, a secretary, and a treasurer, and shall adopt a seal. It shall hold examinations at the seat of government on the first Tuesday in January, April, June, and October of each year, and at such other times as it shall deem

best. The secretary shall keep a record of all its proceedings, including a register of all applicants for license, giving their ages, a description of their education in medicine, and the result of their examination. Said books and register shall be prima facie evidence of all of the matters therein recorded.

Section 2. That Section 2296 of Chapter 35 of the Revised Laws of Minnesota for the year 1905 be, and the same hereby is, amended so as to read as follows:

Sec. 2296. **EXAMINATION AND LICENSE**—A person not already authorized to practice medicine in the state, and desiring to do so, shall apply to the secretary of the board for examination, and pay a fee of ten dollars for the use of the board, *one-half of which shall be returned to the applicant in case of failure to pass the required examination.* At a time appointed, or at the next regular examination, *he shall present to the board a certificate of good moral character signed by two reputable citizens living in the same county where the applicant lives,* and shall prove that he has completed four entire sessions of at least *thirty-six* weeks each at a medical school recognized by the board, no two sessions having been held in one year, or, *if such attendance was prior to the year 1899,* three sessions shall suffice. *Provided that, beginning in June, 1912, all applicants for the examination for license to practice medicine and surgery in the state, graduating in that or a subsequent year, must have satisfied all the entrance requirements, and completed the first two years' work of the college of science, literature, and arts of the university of Minnesota, or present credits for a course elsewhere which is ruled by the said college of science, literature and arts, as equivalent thereto; provided also that a medical student may be matriculated with a condition in not more than one full year subject or two half year subjects, and provided further that the condition or conditions be made up before beginning the second annual medical course counted toward the medical degree.* Every applicant shall be examined in anatomy, chemistry, histology, obstetrics, pathology, physiology, *materia medica, therapeutics,* preventive medicine, practice of medicine, surgery, *diseases of women and children,* and such other branches as the board shall deem advisable. After such examination the board, if seven members thereof consent, shall grant him a license to practice medicine. The examination shall be both scientific and practical, and shall thoroughly test the fitness of the applicant. All answers concerning the treatment peculiar to any school of medicine shall be examined, and their sufficiency passed upon, by the members of the board belonging to that school, and their recommendations thereon shall be final. The board may refuse to grant a license to, or revoke the license of, any person guilty of immoral, dishonorable or unprofessional conduct, but subject to the right of the applicant to appeal to the governor.

Section 3. That Section 2300 of Chapter 35 of the Revised Laws of Minnesota for the year 1905 be, and the same hereby is, amended so as to read as follows:

Sec. 2300. **PRACTICING WITHOUT LICENSE, ADVERTISING, DUTIES OF THE BOARD**—Every person not heretofore authorized by law to do so who shall practice medicine or surgery in the state without having obtained the license herein provided for, and every person who shall so practice contrary

to any provision of this subdivision, and every person who shall advertise in any newspaper, magazine, periodical, or in any other way, that he will cure any disease for a fixed sum of money or its equivalent in note or any negotiable paper, unless he shall give to the person treated a good and sufficient bond for the faithful performance of his duty and the fulfilling of said promise, shall be guilty of a misdemeanor, the minimum punishment whereof shall be a fine of fifty dollars, or imprisonment for ten days. It shall be the duty of the board to prosecute any one violating any of the provisions of this subdivision, provided complaint shall have been made in writing, signed by two reputable citizens residing in the county where such violation shall have been made, and in conducting such prosecution the board shall be authorized to employ such attorney or attorneys as it shall deem proper. It shall be unlawful for the board to grant a permit to any physician to practice medicine or surgery in the state who has not been duly examined and received the required license to practice.

Section 4. This act shall take effect and be in force from and after its passage.

J. W. ANDREWS, M. D.
WM. DAVIS, M. D.
A. E. BENJEMAN, M. D.
J. L. ROTHROCK, M. D.
CHAS. F. McCOMB, M. D.
Special Legislative Committee.

(The portions of this bill which appear in plain type are the old act unchanged; parts appearing in italics are proposed additions or revisions of the law now in existence.)

Dr. W. A. Hall: This is a very important matter, and I move that this subject be made a special order for 2 o'clock tomorrow in the House of Delegates. At that time all of the delegates who expect to attend the meeting will be present, and we shall have more time to discuss the bill and make arrangements regarding it. I therefore move that it be made a special order for 2 o'clock tomorrow afternoon.

The motion was duly seconded, and, being put to a vote, prevailed unanimously.

Dr. J. W. Andrews: I should have said that a copy of this bill was sent to every county society in the state for its consideration and approval or disapproval, and I have letters from the secretaries of a number of societies giving various views about the bill. These letters I will present tomorrow at the time of the special order.

The President: We will now hear the report of the Committee on Medical Defense.

The Secretary: Dr. McCarthy, the chairman, asked me to read the report in his absence.

The Secretary then read the report of the committee, as follows:

TO THE PRESIDENT AND HOUSE OF DELEGATES OF THE MINNESOTA STATE MEDICAL ASSOCIATION IN SESSION AT ST. PAUL, MINN.,
OCTOBER 6, 1908

Gentlemen: The Committee on Medical Defense appointed at the Duluth Meeting in 1907 to report at the St. Paul meeting, would respectfully report that it has carefully investigated the subject of medical defense against suits for malpractice by societies for their members and would respectfully submit the following report:

The state societies of New York, Pennsylvania, Illinois, Iowa, Nebraska, Massachusetts, Wisconsin, and Maryland all have in operation the medical defense feature for their members. The Wayne County, St. Louis County, and the Philadelphia County societies have such features in operation. The Chicago Medical Society had such a feature in operation previous to the adoption of the plan by the Illinois State Association. The state societies of Michigan, Missouri, New Hampshire, and New Jersey have committees at work upon the subject to report at their annual meetings. The state societies of Ohio, West Virginia, Georgia, and California are looking forward to taking up the subject.

All societies where this feature is in operation are enthusiastic in their praise of it. The plan has been most thoroughly tried out in New York, Pennsylvania, and Illinois. The counsel for the Medical Society of the State of New York in his last annual report, reported as follows: "Your counsel has to report that for the past two years, during which time he has represented the Medical Society of the State of New York, in this class of litigation there has never been a single dollar by way of verdict against any member of the Society who has asked the Society and received malpractice defense. * * * The amounts involved in the actions begun in the year 1907 aggregated upwards of \$200,000. The actual number of actions brought has decreased 25 per cent and at the same time the State Society has increased its membership. It is satisfactory to report that the real end in view, namely, the arresting of an increasing number of malpractice suits is being speedily accomplished." Dr. Townsend, Secretary of the Society, writes: "We have found the system to work very well in this state. I believe it to be one of the best things that the State Society can possibly do."

Dr. Bryant, in commenting upon the feature and its operation in New York, says: "It should require no admonition on my part to impress on the understanding of practicing physicians the fact that malpractice prosecutions are, in the great majority of instances, unwarranted legal persecutions. It is also unfortunately true that the sympathy of the lay masses, and sometimes those of professional calling, strongly incline to the side of the plaintiff. The saddest feature of it all is, that the brilliant prospects of competent and worthy physicians suffer indefinitely, and often deeply, even after acquittal, because it is rare, indeed, that homely truth in a race of justice can overtake picturesque falsehood. The appetites of envy and of chatter are keener and more active than those of passive sympathy or the introspective compassion usually exhibited in such cases. It does seem to me that each member of the Society would take special pleasure in contributing his mite to the total required for the reasonable de-

fense of those who are unjustly attacked while in the faithful pursuit of their calling. It does seem to me that the spirit of fraternal relationship as embodied in the principles of ethics, so recently and overwhelmingly adopted by the profession of the state, would silence those who, for captious reasons, would in any way embitter the adverse sting of persecution. The report of Mr. Lewis, the attorney of the State Society, will, in my judgment, decidedly impress on you at least two important facts: first, that the duties of his station in this connection are both onerous and beneficent; second, that no one engaged in the practice of medicine is yet immune to subtleties of malignant mischief, or to the embarrassment of defensible error."

The Pennsylvania plan has been in operation two years. Three actions were caused but none of them came to trial, all being dropped. The Pennsylvania State Society has a balance of \$1,386.00 in the defense fund. It sets aside to cents per member annually to be placed in the defense fund.

In Illinois, Dr. Weis, Secretary, reports as follows: "It has been the best thing that we have undertaken. It has operated in many ways, particularly in cementing the interests that physicians have in common. It has increased our membership 25 per cent. It has been in operation in our society for three years and three years previous to that in the Chicago Medical Society. All told, we have had thirty-seven cases up to our last report in May, 1908, every one of which was won by the defendant. Not all of these cases were tried in court, but of all that were, the doctors were successful. One case was settled because the surgeon exceeded his privilege in that he removed some skin for the purpose of grafting it without the first patient's consent or knowledge. The total cost of this protection is \$1.00 per annum per capita, and I can assure you that it is the best investment that can be made."

In every society where the feature has been tried out, it has proved eminently successful. It has decreased the number of suits in which judgments for the plaintiff have been rendered. It has given to the profession better legal talent in that it trains one legal firm in this special field. It has invariably increased the society membership and made the payment of dues more prompt. It cements a society into a more compact organization.

We therefore offer the following amendments to the By-laws of the Minnesota State Medical Association and recommend their adoption.

That Chapter VII be amended by the addition of Section 6, which shall read:

Sec. 6. The Council shall investigate all suits for malpractice instituted against its active members. Each councilor shall investigate the suits occurring in his district and report to the Council as a whole.

That Chapter XI be added to the By-laws, which shall read:

1. Active members of the Minnesota State Medical Association who have paid all dues, assessments, and other charges assessed or levied by the Minnesota State Medical Association, shall be entitled, on conditions hereinafter specified, to receive, without personal expense therefor, legal advice and court service of an attorney or attorneys-at-law in the employ of the Association, witness fees for the purpose of conducting their defense in any court in this state, when they are accused of malpractice, or of illegal transactions in

connection with the commitment of persons to institutions for the insane.

2. It shall be the duty of the Council, severally or collectively, to investigate all claims of malpractice against members, to adjust such claims in accordance with equity where possible, and, if in their judgment an adjustment is impossible, or the claim is unjust, or the damage sought is excessive, to tender such help, aid, and counsel as they may see fit. They shall be empowered to contract with a member of the bar of Minnesota as legal counsel of this Association. They shall have charge of the defense fund, which fund shall be secured as follows: Each member of the state society shall be assessed \$1.00 for the first year and not to exceed \$1.00 per year thereafter, for this fund alone. This fund shall be paid along with other dues and through the same channels. It shall be kept separate from other moneys of the Association, and may be invested by the Treasurer under the direction of the Council and shall be used only for the legal expenses of members threatened with or prosecuted for alleged malpractice.

3. The Council shall make an annual report to the House of Delegates at the annual meeting for the year previous ending March 31st. This report shall contain a statement of the condition of the defense fund together with an enumeration of all suits or threatened suits for malpractice against members of the Minnesota State Medical Association which have been properly presented to them for action.

4. The legal services herein provided for shall be granted only on the following conditions:

First. Any active member desiring to apply for malpractice defense hereby provided, shall immediately upon receipt thereof send to the Secretary of the Minnesota State Medical Association, any letter, process of court, or other evidence of threatened litigation in connection with such malpractice case.

Second. It shall be the duty of the Secretary to forthwith examine the financial records of the Minnesota State Medical Association, and if such member so applying is found to have paid all arrears, dues, or other charges due the Minnesota State Medical Association for the year, he shall certify those facts to the Council of the Minnesota State Medical Association, and forthwith send to such Council the papers received from the applicant for defense and such Secretary shall forthwith return to the applicant, if he shall find that the applicant has paid all arrearages due the Minnesota State Medical Association, a formal application for defense containing authority for the said Association through its attorney to defend the action and granting to the Association and its attorney, sole power to conduct the defense thereof, and agreeing not to compromise or settle said claim for damages for said alleged malpractice without the consent of the Minnesota State Medical Association or its attorney. The said applicant shall furnish and return to the Secretary with his application duly executed, a full, accurate, and complete history of his treatment of the case out of which the alleged malpractice arose, giving dates, names of witnesses, nurses, and other attendants, all of which information shall, upon its receipt by him, be forwarded by the Secretary of the Minnesota State Medical Association to the Council of the Association.

Third. If, on the other hand, the Secretary finds that any member so applying has not paid all arrear-

ages as herein specified, then and in that case, he shall return at once to the applicant all papers or memoranda received by him from said applicant, together with a statement that he is not entitled to defense and the reason therefor.

Fourth. It is further understood between each and every member of the Minnesota State Medical Association that under no condition nor contingency will the Minnesota State Medical Association pay any sums awarded in settlement, compromise, or by any verdict against any member sued for alleged malpractice, and each member applying for the services of the attorney of the Association in any malpractice case, shall agree not to obligate in any manner the Minnesota Medical Association or any persons connected therewith to the payment of any sums whatsoever for any purpose.

Fifth. The Minnesota State Medical Association will assume the defense in a suit for malpractice against a member only when the cause for the alleged malpractice occurred subsequent to the date on which the member joined the Association.

Sixth. This chapter shall be in force on and after April 1, 1909, and the defense year shall end on the last day of March of each year.

(Signed) W. J. McCARTHY,
E. S. JUDD,
R. C. DUGAN,
R. E. FARR.

Dr. J. W. Bell: This, I think, is as important as the last matter before us. Some of us would like to be more familiar with it before discussing it. I therefore move that the consideration of this matter be taken up tomorrow afternoon immediately following the consideration of the medical-practice act.

Dr. J. W. Andrews: I agree with the motion and agree with the idea expressed by the mover. This is quite a lengthy report, and it seems to me the delegates should be in possession of the printed or written report. If someone simply reads it, much of the subject matter cannot be retained, and it will be impossible to act upon it intelligently. However, I am in favor of the motion.

Dr. Thos. McDavitt: I move as an amendment to Dr. Bell's motion that the Secretary be instructed to have reproduced as many copies as may be necessary for general distribution among the members present at the meeting.

Dr. J. W. Bell: I agree with the Secretary that that is the proper thing. I think we ought to understand all about it before we take any action, and I will accept the amendment to my motion. The motion as amended was then put to a vote and prevailed. Unanimously adopted. The President then read the text in the following form: Relating to the

REPORT OF COUNCILORS

THIRD DISTRICT

Dr. W. S. Fullerton, St. Paul.

There have been no complaints filed, and no requests have been made to form new societies. I believe at the previous annual meeting the rules were so amended that it would not be necessary to make visits to the different societies in the district unless it was necessary. I do not think I have anything further to report.

FOURTH DISTRICT

F. A. Knights, M. D., Minneapolis.

No complaints have been received and no matters referred to me for consideration. I attended a meeting of the Crow River Valley society, which is not strictly a component part of the State Association, but it embraces all the members of the county societies in that district. The session was of a social rather than of a business nature, and there is no report to be made of it. The reports of secretaries and the reports of meetings indicate that the societies are doing their regular work. Further than that I have nothing to report.

The Secretary: Dr. Dodge, of the Seventh District, is unable to be present, but he has sent me his report.

The President: The Committee on Necrology should make its report next, but as the chairman, Dr. More, is not present, we will have to defer it to some future time.

Dr. J. W. Bell: I have an amendment to the By-laws which I wish to offer at this time. I will ask the Secretary to read it.

The Secretary then read the proposed amendment, amending Chapter IX, Section 5, of the By-laws. (The text of the proposed amendment appears in the record of a subsequent session of the House of Delegates.)

The President: Under the rules, this amendment will have to lie over twenty-four hours before action can be taken upon it.

The Secretary: I have received a communication from Dr. W. S. Fullerton, which I will read with your permission, referring to some charges considered by the Ramsey County Medical Association.

Dr. Wm. Davis: Our rules provide that any charges made before the House of Delegates are to be referred to the Council, and it seems to me that means that such charges are to be investigated except by the Council, and there is no point of order in this charge, so far as I am concerned. The President: The present or future Council also has the right to see this body of law; but I would like to see this body of law. The President: The present or future Council also has the right to see this body of law; but I would like to see this body of law. The President: The present or future Council also has the right to see this body of law; but I would like to see this body of law.

Dr. Wm. Davis: In regard to the point the President makes, as to whether this should go to the present or the future Council, this matter of an investigation might be left to the Council itself to determine, and if the Council finds it cannot be gone into sufficiently at this time, they can hand it over to the next Council. The point I wish to make is that our constitution and by-laws are very emphatic in their declaration that such charges go at once to the Council without any discussion.

Dr. W. S. Fullerton: That was the point I wished to raise, that this should go at once to the present Council. The present Council is still in authority as the official body of this Association and will be until new members are elected Friday morning.

The President: Do I understand you, Dr. Davis, to make a motion?

Dr. Wm. Davis: No; no motion is necessary. This goes at once to the Council without discussion. Anything more than the simple reading of the complaint is out of order.

Dr. J. W. Andrews: At the New Orleans meeting of the American Medical Association a new code of ethics, or rather the principle of American medical ethics, was thoroughly discussed, and a new code of ethics was adopted. One thing discussed there, thoroughly discussed and made prominent in medical ethics, is a provision against commercialism, a provision against the division of fees. I think the physicians of Minnesota need new medical legislation. I believe I would be in favor of this defense legislation, but the greatest evil in the profession in Minnesota today is this very thing prohibited by the principles of medical ethics, the division of fees, and it has occurred to me many times during the past year that this body, this legislative body, this representative body of the physicians of the state, ought to take some definite action in regard to the matter. If you raise the question in country places—and when I say country places I mean places like Rochester, Mankato, Winona and other places—you are at once met with this statement: "The Twin City physicians do it, and we have to do it in order to keep our business from going there." I do not know how true the accusation is; I hope it is not true; but I would like to see this body of delegates take some definite action looking to the abolition of commercialism in the medical profession of Minnesota. I have nothing at present especially to present, but I would like to see

the question taken up by this body during the present session.

On motion of Dr. Isaac Lemieux, the House of Delegates adjourned until 2 o'clock Wednesday afternoon.

SESOND SESSION, WEDNESDAY AFTER- NOON OCTOBER 7th

Pursuant to adjournment, the House of Delegates was called to order by the President at 2 o'clock.

The minutes of the previous session were read, and on motion approved.

The President: The first matter for consideration is a special order of business, the amendment of the Medical Practice Act. Dr. Andrews is chairman of that committee.

Dr. J. W. Andrews: Mr. President and Gentlemen: I think before the discussion of this matter is taken up it will be proper for me to read these communications, received from the different component societies.

Dr. Andrews then read letters from the secretary of the Nicollet and Le Sueur County Medical Society; from Dr. James, addressed to the president of the Blue Earth County Medical Society; from the Clay-Becker County Society; O. E. Radley, Albert Lea; E. R. Barton, Frazee, and the Wabasha County Medical Society.

Dr. Andrews: Those, gentlemen, are all the reports that the committee received, although a circular letter, together with a copy of this proposed change, was sent to every medical society in the state. I am quite willing to excuse many of the societies for not responding, as, of necessity, we were late in sending these out, and the societies were having their summer vacations, and, I am sure, some of them have not been in session. I know that the Blue Earth County Society has not been in session since then, and for that reason Dr. James, a member of the society, sent the letter which I read in your presence.

The President: The proposed amendments are up for discussion.

Dr. Andrews: I move that the bill at once pass to its second reading; that is, section by section, and that suggestions and amendments be made as the sections are read.

Dr. Andrew's motion having been seconded and carried by a unanimous vote, he then read Section 1 of "A Bill for an Act Amending Sections 2295, 2296 and 2300 of Chapter 35 of the Revised Laws of Minnesota for the Year 1905, Relating to the Regulation of the Practice

of Medicine and Surgery and the Licensing of Physicians and Surgeons."

Dr. Andrews: You will observe that all the matter printed in italics is new and all printed in the larger type is taken from the bill as it now exists.

A motion was made and duly seconded to adopt Section 1 as read.

A Delegate: "All appointments shall be made from lists of nominees furnished by the Minnesota State Medical Society, the Homeopathic State Medical Society, and the Eclectic Medical Society." I would like to inquire why the doctor specifies the third society there?

Dr. Andrews: I refer you to Dr. Wm. Davis to answer that.

Dr. Wm. Davis: That was put in so as to anticipate any objection there might be made to eclectics being left out. Sometimes a small number of men make a good deal of noise. Of course, if there is no eclectic society, they cannot have appointments, as long as they do not exist. Should there be such a society, then the provision is made for them.

Dr. Charles Swenson: We have very few eclectics. Why would it not be wise to place a minority of the eclectics on recommendations to the board and to the Governor? It is a question whether we have any eclectics, and it seems hardly fair that they should serve equally with the homeopaths and regulars. It says three regulars, three homeopaths, and three eclectics.

Dr. Wm. Davis: I don't see that in the bill.

Dr. Andrews: It seems to me that we have sufficiently recognized the eclectics. Any more mention would give them more prominence than they are entitled to.

The motion was then put to a vote and prevailed unanimously.

Dr. Andrews then read Section 2 of the Act.

A Delegate: It says "four entire sessions of at least thirty-six weeks each at a medical school recognized by the board, no two sessions having been held in one year, or, if such attendance was prior to the year 1899, three sessions shall suffice." A large number of schools previous to the year 1899 had a term of eight months and some even of six. Would that debar any of those from coming into our state? I know that there is a reciprocity provision that these schools are admitted from certain states. Would it debar anyone from coming into the state, anyone who has not had a nine months' course?

The President: I should think it would.

Dr. Andrews: I think that is the idea. It does bar them.

Dr. Davis: "If such attendance was prior to the year 1899, three sessions shall suffice." That is the old law. What we meant to do was to continue the old law in the case of graduates prior to 1899. I move that this section be amended by inserting in this paragraph after the words "if such attendance was prior to the year 1899" the words "*three sessions of twenty-six weeks each shall suffice.*"

The Secretary: Suppose some old man came in here who had only two years, way back early in his career, before we even knew what a three-term school was?

Dr. Davis: Our intention was to make that part of it conform to the first law, and I think that says nothing about the two-year course, so we would not be any worse off than we are under that.

Dr. W. T. Adams: I think Dr. McDavitt's question is pertinent. We have in Minnesota a large number of men, many of whom graduated about thirty years ago, when none of the colleges required over two terms of twenty weeks each. It seems to me to have that become a law absolutely debar those men from the state, no matter how good physicians they may be.

The motion offered by Dr. Wm. Davis, having been seconded, was voted upon and prevailed.

Dr. Wm. Davis: I will promise to look this matter up between now and our next meeting, and should I find that the present law has any provision in it governing the cases of the graduates of schools of a course of two years, I will offer an amendment at the subsequent meeting of the House to cover that. Our intention was to carry out the provision of the present law governing the case of graduates prior to 1899.

Dr. Robertson: "Provided that, beginning in June, 1912, all applicants for the examination for license to practice medicine and surgery in the state, graduating in that or a subsequent year, must have satisfied all the entrance requirements, and completed the first two years' work of the college of science, literature and arts of the University of Minnesota." Do we cut out thereby those who attended some other institution? (Cries of "No, no.") I object to their completing two years' work in science, literature, and art before the medical course. We have enough in medicine alone to give physicians six years of good study in our institutions without putting them through two years in

science. If we gave them two years in pharmacy, or something that would be of some use, I think it would be better.

Dr. W. A. Hall: I would like to make an inquiry as to what effect the original requirements in this state would have upon the profession of the United States on the question of reciprocity between the states. Fortunately, or unfortunately, I have been practicing just enough so that there are many states where I could not go, and I might have all the knowledge of medicine that any one had, and I could not be admitted, because I could not fulfill those preliminary requirements. I could not go into the state of California and pass an examination under their law. I didn't have four courses of medicine at the time I graduated. They were not twenty-six weeks' courses either. They were only about twenty-two or twenty-three. The great question that, I think, concerns the profession of the United States is to be able to abolish the arbitrary lines between the states. Why should a man who has completed a course of medicine, complying with the requirements in his own state—why should he be prohibited from going across this imaginary line into another state and be unable to practice medicine? I think that is a question for the profession to deal with.

Referring to this question of raising the requirements and requiring men to have two years in a college of liberal arts before they can study medicine, I am simply asking this for information as to what effect it will have in helping the reciprocity feature, whether it will help or retard it.

Dr. Tomlinson: I notice in this wording that it provides that they shall either have taken this course "or present credits for a course elsewhere which is ruled by the said college of science, literature, and arts, as equivalent thereto;" so that it seems to me it provides a means by which a man may present to the State Board of Examiners evidence that he has taken a course equivalent to this two years, and that is sufficient. He does not necessarily have to have taken it in a college, so that he can present the evidence that he has that degree of general culture.

The President: It must be equivalent to the two years' course that the University of Minnesota gives. It specifically mentions the University of Minnesota, or equivalent to the two years' course.

Dr. Tomlinson: The course is practically the same as used in all colleges. I think that it

has reached such a point in this country that a man would hardly want to present himself as a candidate for the medical college who had not acquired that amount of training.

A Delegate: Take the high school. After they graduate from a high school they are considered pretty well up. After that do they have to take two years yet in the University of Minnesota? Can't they take any of that in the high school? It seems a little hard, in my opinion, to add six years after that.

Dr. Andrews: There is just the point exactly, and it would be fatal to this revised medical legislation to lower our standard. I want to read just one sentence from a very eminent attorney who assisted in preparing this bill: "In any event this proposed law is right, and it should be the duty of every profession to raise its standard of knowledge and proficiency."

I will tell you in this enlightened age and in America, and in the state of Minnesota, we don't want students entering our medical colleges with only a high-school education. Let us compel them to take at least two years in the University. Those requirements are none too great. The way to weed out our profession and ennoble it is to raise the standard primarily and also for the medical course itself. Minnesota has taken to herself great credit in the past for this very thing. Let us not fall down at this time.

A Delegate: It occurs to me that Dr. Andrews is off the question that was raised by the doctor in the other room. The question is, are we going to affect this reciprocity so that the standards are going to be the standards of the present day or in vogue years ago, when many of us were in practice? I have been out for twenty years or more. If I want to go to some other state, am I shut out from that state because I didn't attend a four years' course? That was the question raised by the doctor. Is it the purpose of this law to do that, or is it the purpose to affect our reciprocity in a way that the older physicians can enjoy the privileges?

The President: It would not affect our standing. It is practically the same as far as that is concerned as the old law. Dr. Andrews does not propose to change that part of it. It will not affect our standing with other states. If we reduce our standard here, it will affect us. If we "let down the bars" and take them in, say from the high school (which I am in favor of, personally), it will affect us, but we don't propose to do that now in this bill. I am in favor of a general American standard, which is

outlined by Dr. Bennett, so that every state will agree to some standard. Then the matter of reciprocity will be settled and there would not be any trouble any more. But Dr. Andrews does not propose to change that at all. The committee has not recommended any change so far as that is concerned.

Dr. Andrews: We want to place ourselves in a position so that reciprocity will be increased rather than decreased.

Dr. F. A. Knights: I wish to inquire about this reciprocity. This says (referring to bill) that every person shall apply to the secretary of the board for examination. It doesn't make any exception regarding any reciprocity matter at all. So far as the text here is concerned, it would absolutely shut us out from reciprocity.

Dr. Andrews: That is another matter.

Dr. Knights: Is there not in the old law a proviso attached to this clause regarding reciprocity?

Dr. Andrews: That is a separate item.

Dr. Knights: In regard to the matter of provision of funds by which prosecutions may be carried on: This law provides that a fee of ten dollars shall be paid and one-half returned in case of failure to pass the required examination. The number of examinations here will average, possibly, fifteen in all the months of the year, except June, and in June will not run over sixty. It is difficult to see how out of one hundred and fifty dollars three times a year you are going to pay the expenses of nine members of the board on a per diem consideration for the examination of papers and their per diem during the meeting of the board, and have anything left with which to conduct a prosecution. The fact that during the June examination you have fifty or sixty or, possibly, seventy-five, is not going to provide enough extra funds to conduct any prosecutions whatever, and the proviso that one-half of the fee shall be returned to applicants who do not pass the examination reduces the accumulation of funds and inflicts a hardship on the board, because it is more trouble to examine the papers of the man who does not pass the examination and to act in his case separately than it is to conduct the examination of the man who passes the examination of the board.

Dr. Robertson: In explaining my meaning to Dr. Andrews, I would say that I do not wish to reduce the requirements for graduation. In this bill here we give away all our rights to say what the students should study prior to study-

ing medicine. I think the State Medical Association should dictate what the medical students are to study before beginning the study of medicine. I think if we are going to study those sciences the medical profession are better able to dictate what those studies are to be. I think we should not throw away our only chance of saying what the students should study by giving it to the scientific department of the State University. We know what our students need. We want them to learn something that will be of some benefit to them in their medical studies in the University. We can just as well tell the scientific department what they shall study.

Dr. Wm. Davis: I think I can make this clear. We have a state university with a department of medicine and a faculty made up of members of our own society and a few men outside who are teachers of medicine and not practitioners. I think you will admit we have a very good medical department and a good faculty. They decide what are the requirements for admission to the medical school, and they settle it after due deliberation and after some experience in teaching. I think they know better than the average of us general practitioners of medicine. They fix these requirements for admission to the State University. What we propose to do by this law is to provide that nobody shall come into this state and take an examination for license and be licensed here who has had less education than is required by our State University; that nobody shall have the advantage over our own students; that they must all have had as much preliminary education before taking a course in medicine as we require of our own students in the medical school. We think we are justified in bringing everybody up to our standard. If anybody has a higher standard, well and good, but we don't want to admit anybody who has a lower standard. Should we do that, the temptation would be for young men in Minnesota to go, not to our medical school, but to some of these other schools which offer them easier admission and would work a damage—would damage our medical school and also damage our profession by bringing into it men of inferior education.

Dr. W. T. Adams: I would like to ask if the four years of academic and four years of medical work may not be reduced to seven years in the State University?

A Delegate: The requirement now, or, at least, the requirement which will be operative within a year or two, is the giving of the two

degrees, the baccalaureate degree and the medical degree, in six years,—two years in the academic department and four years in the medical department. That will be operative next year. It will not be possible in a year or two to enter the medical department without two years' preliminary education in the academic department. At the time I took my work, a person could enter the medical school from the high school.

Dr. O. M. Haugan: It seems to me that this question is one of considerable importance. There is one point which appeals to me particularly, and one provision which I think we should omit. It goes on to say here "provided also that a medical student may be matriculated with a condition in not more than one full-year subject or two half-year subjects, and provided, further, that the condition or conditions be made up before beginning the second annual medical course," etc. In the first place, if we prescribe two years' work in the arts and literature, it seems to me that this provision for a condition is something that is unworthy of the law. If a young man is required to take two years in the academic department, we expect him to be a young man to get through without a condition. I do not like that provision. He may enter in some sort of a fashion, provided he works off his condition. Furthermore, that is a matter that ought to be left with the faculty of medicine at the time he enters.

Referring to the requirement here of two years of work in the college of science, literature, and arts: I think that is a question which requires a little thought. I happen to be one of those fellows who got through the academic department in some way or other before I took up medicine, and I want to tell you, gentlemen, that there are a great many things that you get in the college of science, literature, and art which mean absolutely nothing to you when you take up medicine, and there are a great many things in that department, in the department of literature and art, which would mean a great deal to you in your work as a doctor, providing you only knew it at the time. Take the freshman work, and we all know that the studies are prescribed for the freshman. He doesn't know what he wants, and so they provide him with what he needs. It seems to me that in view of the fact that this young man is going to study medicine, it would be better if he would be given an opportunity to take up certain studies along the lines of biology, for instance, and chemistry, and those things which are right in his line of work when he takes

up his life-work of medicine. When he graduates from the high school he has all the mathematics that he needs—at least, he is fairly provided along that line, but he needs all the chemistry he can get. He needs all the botany that he can get, and all those sciences along that line. With him it is a question, is chemistry and is biography and is history—I don't remember them all—are they all needed? They all come in very nice, but they have not the direct bearing upon the subject which he is going to deal with later. It is a question in my mind whether it would not be better to make a combination course. I am not in favor of cutting down, though I must confess that in the state of Minnesota we act a little peculiar once in a while. We are prescribing how to make it more difficult, and then we turn right around in the legislature and let almost anybody practice, providing he call himself something else, but that is a different story. (Applause.)

The point I am making is this: All of these studies that we get in a university course are studies which add to the culture and training, intellectual development, and the general strength and power of the individual along every line. It is a splendid idea, but we all know that it does not make so much difference whether a man studies chemistry or mathematics or Greek—all of those subjects have a certain bearing upon his intellectual development. It is not always necessary that we should take something that is not practical. The practical will do that just as well. It is a question with me whether a course of six years could not be arranged whereby the cultural part of the course would be maintained, and with that cultural part the elements used, the studies employed to attain that culture that would be more of a practical nature and more in line with what a physician would use and employ later on as he enters upon his professional work. If we could do that it does not seem to me that it would lower the standard. It would attain to the same cultural training and at the same time give the young man something more of a practical nature which he could employ later on as he starts out.

Dr. Andrews: My son graduated in the State University last June and did exactly what the last speaker has outlined. He intended to make a physician of himself when he graduated from the high school, and he went to President Northrop and Dr. Ritchie, the latter of whom was then Dean of the faculty, and had them outline for him a course of two years in the University, and

the studies outlined were practically what is mentioned here. He did not take any mathematics at all. It depends upon whether a young man knows whether he is going to be a physician. If he expects to take up medicine, he can do now in the University just what the last speaker outlined.

Dr. Hall: I will just say one word. In the first place, I want it to be distinctly understood that I am in favor of raising the requirements. I think the time will eventually come in this country when a man will be obliged to have a baccalaureate degree before he will be admitted to any medical college in this country, but that is not the point I am making. If the state of Minnesota should pass a law providing that all men who come before the examining board shall have certain requirements before admission to an examination, that is well and good. If they want to pass a law providing that after 1912 they shall have a baccalaureate degree before they study medicine, well and good; but as affecting this question of reciprocity, your men who are in college to-day, if the law should require that, if they have not met this requirement now, they will never be able to do so. That should not affect physicians who graduated before this law went into effect, because if you make it apply to practitioners who graduated before the law was passed that effectually bars them from coming into this state. I can go back to my homestate, New York, but three-fourths of my classmates who are alive to-day could not come into this state under such a provision as that. There are not one-half of the ex-presidents of the American Medical Association who could come into this state provided these provisions were to be made effective, because they graduated early in life. That is the point. I think the question of reciprocity is a question that should be looked out for. If you want to serve notice on the people who commence the study of medicine in 1908 and graduate in 1912, that is all right, but to serve notice upon men who have already practised medicine that they cannot come into this state will affect reciprocity inasmuch as other states will retaliate. It is not a question of lowering the standard. Raise it, raise it all it will stand, but don't make it active in that way to affect men who have graduated so many years ago.

Dr. Tomlinson: I would like to ask if this proviso regarding graduates prior to the year of 1899 does not cover the objection of Dr. Hall. I think Dr. Davis could answer that.

The President: Three sessions, it says. That would not provide for men who had attended only two sessions.

Dr. Tomlinson: Our original law in 1887 provided three years. We have been working ever since then under that provision—twenty-one years now.

The President: Any further discussion?

Dr. Tomlinson: Before you put the question with regard to the whole section, I would like to say something in regard to the subject. It is simply a suggestion. I don't want to put it in the form of a motion. It is this, that it has been my belief for a long time that the state should only require to know that a man is educated in what you might call the science of medicine, and that examination in special divisions or branches of that science is not only unnecessary, but uncalled for. I have always believed that if the examination included anatomy, physiology, chemistry, pathology, and diagnosis, or medicine, whatever you choose to call it, that we would ask of them all that we were required to ask, and if they would pass in those branches they were perfectly competent to practice as they pleased. At the same time it tends to eliminate the sectarianism of medicine. There are a few states which were wise enough to put in their provision only those subjects which would determine whether a man had been scientifically educated. It seems to me that materia medica, obstetrics, therapeutics, and diseases of women and children are entirely uncalled for and out of place, because a man who is capable of passing an examination in the branches I have described would be perfectly competent to practise any special branch he would prepare himself for.

Dr. W. T. Adams: I don't feel quite satisfied in regard to the old men in the state who may want to move to some other state. If this goes into effect, any man who graduated prior to the time when medical colleges established three courses would be barred from asking reciprocity anywhere. It is a fact that the larger part of medical schools prior to 1880 did not have any more than two courses. In Minnesota we have a large number of men who graduated under the two-course system of the colleges, and if the law says three courses, those men are barred out of any reciprocity in case the state of Minnesota ever passes a law of that kind. I would feel that it is right to give relief to those men.

Dr. H. M. Workman: I would like to move an amendment to Dr. Davis' amendment, so that

men who graduated in medical colleges prior to 1899 who had two courses of lectures of twenty weeks each be legalized in this bill—that their practice be legalized. Not that we would admit new men, but simply that the old men who are so situated would have a measure of relief. I offer this as an amendment to that section “That any physician licensed by a state board of examiners prior to the year 1899, having reciprocity with this state, shall be admitted without being required to take an examination.” But he must have passed his state board examination.

Dr. Adams: Suppose he was licensed before he had any examination?

Dr. Workman: The old law has proved good so many years, and it is still in force regarding these old men. Why not let it stand? This is only a provision for later applicants. Let the old law stand in regard to these old men. Then, if there is a reciprocity provision with other states, they will come in; but we ought to have some reservation that while this law is amended it does not do away with the old law as it is in effect, only as amended. I think that was the intention. I do not know that it is necessary to insert that.

Dr. Andrews: I am not going to make a speech, because I have made speeches enough. I just want to say this, I do not know why we should be saying so much about reciprocity. We have a separate law now on the statute books referring to that. I see the point that Dr. Hall makes that we may get ourselves into a position where other states will not grant us reciprocity. I desire to second Dr. Workman's amendment.

Dr. Tomlinson: I would like to call attention to another thing in regard to the subject of examination and that is, that all of the alleged specialists, who are not trained medical men, claim to practise only some particular thing, and they make their appeal to the public and the legislature from the fact that they do not practise these branches, but they couldn't successfully make that appeal if the requirements were that they should give evidence of the fact that they are educated men in medicine, and with the leaving out of these special subjects,—simply taking up the scientific subjects of anatomy, pathology and diagnosis, or medicine,—then all of these people could not make that claim. They couldn't plead martyr before either the public or the legislature, and the tendency would be, as it is in Alabama, to eliminate entirely sectarianism.

The President: Dr. Workman's motion is before the house.

Dr. Wm. Davis: Do I understand that all graduates before 1899 in states having reciprocity with this state are to be admitted without any examination at all?

Dr. Workman: If they have licenses.

Dr. Wm. Davis: All graduates prior to 1899 licensed in states having reciprocity with this state are to be admitted to this state without any examination?

Dr. Workman: That is my proposition.

Dr. Wm. Davis: To admit them to examination would do, but to admit them to practice is extraordinary.

The President: That would open the gate for everybody.

Dr. Hall: If I graduated prior to 1899 I could come in without any examination?

Dr. Workman: You passed your examination in some other state prior to 1899. You would be admitted to this state without examination.

A rising vote was then called for, which resulted in the defeat of the motion.

Dr. J. W. Bell: I would like to offer a slight amendment, simply changing the figures 1912 to 1914. I think a young man desiring to take up medicine should know now what he wishes, and if he is desirous of taking two years of academic work and then taking up medicine he would know just what he has to face.

Dr. Andrews: It does not seem to me that that ought to prevail. Six years hence—half of this company will be dead by that time. I think we have given a large leeway by fixing 1912.

The amendment as offered by Dr. Bell, having been duly seconded, was voted upon and prevailed.

Dr. Tomlinson: I wish to offer this amendment; that is, that the subjects for examination for license to practice medicine shall be anatomy, physiology, chemistry, pathology, and diagnosis.

Dr. Andrews: Don't you include preventive medicine?

Dr. Tomlinson: All those other subjects are specializations.

Dr. Wm. Davis: I would like to call Dr. Tomlinson's attention to the fact that he has left in the provision “such other branches as the board shall deem advisable.”

Dr. Tomlinson: Strike that out, too. I move that this section be amended with regard to the subjects for examination for license to practice

medicine in Minnesota to read: "Every applicant shall be examined in anatomy, physiology, chemistry, pathology, and diagnosis," and to strike out the words "and such other branches as the board shall deem advisable," and also to strike out "all answers concerning the treatment peculiar to any school of medicine shall be examined, and their sufficiency passed upon, by the members of the board belonging to that school."

Dr. Bell: I would like to ask the doctor to include preventive medicine.

Dr. Tomlinson: I do not see any necessity for it. If he is trained at all, he is trained in preventive medicine.

Dr. Bell: This is the day of preventive medicine.

Dr. Tomlinson: I have no objection, except that it is superfluous.

Dr. Knights: I agree with Dr. Tomlinson to a considerable extent, that the number of branches might be reduced, but I submit that it is not evidence of a medical education that a man shall understand anatomy. If we examine him in surgery we give him to understand that he is educated in anatomy, but we are not justified in inferring that he is educated in surgery because he understands anatomy. The same thing applies to some extent in regard to the practice of medicine. We are justified, if a man passes his examination, in concluding—we are certain—that he has a knowledge of physiology and pathology and of materia medica and therapeutics, but the so-called preliminary branches do not demonstrate his fitness in the practice of medicine. That is illustrated by every examination that any man takes before the State Board or before the faculty of any medical school. If I were to modify that at all, I would strike out "anatomy" and substitute "surgery," and strike out "pathology and physiology" on the ground that, like preventive medicine, they are entirely superfluous.

Dr. Tomlinson: I think that I included one branch in my provision that included all the objection of Dr. Knights, and that is the subject of diagnosis.

The President: I think this is a pretty big subject and ought not to be settled right here. It seems to me a very radical proposition that Dr. Tomlinson is offering. We have gotten along pretty well in the past as the law now reads, and this seems to me a pretty radical departure.

Dr. Tomlinson: I would like to say that there are three states in the United States that have a

provision like this, and in those three states there is no sectarian medicine.

The President: Was there ever?

Dr. Tomlinson: Yes. The particular shining example was Alabama.

The President: Do you suppose our legislature could be induced to pass a law doing away with sectarian medicine?

Dr. Tomlinson: These specialists all bring up the claim that they don't practice; that surgery does not refer to them; that any other special subject does not refer to them; and they will give that as a reason why they should not be required to pass an examination. We know it is a fact that in spite of our restrictions, irregular and untrained men can practise in this state without any difficulty at all, and that the number is increasing, and that if we do ask for any legislation it should be legislation that would work to the getting rid of sectarianism and making all men stand on an equal footing so far as the conditions of their license are concerned. All these irregular practitioners are specialists. I do not mean to criticise specialists by saying that. I might quote Horace Greeley, but I won't.

A Delegate: The provision following this says "all answers concerning the treatment peculiar to any school of medicine shall be examined, and their sufficiency passed upon, by the members of the board belonging to that school," following Dr. Tomlinson's suggestion, that we just merely find out if a man is educated and then if he wants to practise osteopathy, let him be examined by some one who knows about that. If he is examined, let them examine and find out that he is an educated man, and then if he wants to practise regular medicine, let him; if he wants to practise homeopathy, let him be examined in that.

Dr. Andrews: I do not dislike the first part of Dr. Tomlinson's amendment, but it would be a serious mistake if this House of Delegates were to recommend striking out the clause following, "and such other branches as the board shall deem advisable," taking away from the board of examiners the right to use any judgment whatever in the examination of applicants.

Dr. C. C. May: I would like to offer this: after the words "prior to the year 1899" strike out "three sessions shall suffice" and insert "practitioners licensed to practise in states having reciprocity dealings with this state shall be admitted to examination and license, without regard to the number or length of terms of the medical school."

The President: We have a question before the house, Dr. May, as to the subjects to be examined upon. I think we would better dispose of that and take up yours later. The motion of Dr. Tomlinson will be voted upon—that we restrict the subjects to anatomy, physiology, chemistry, pathology, and diagnosis,—five subjects,—and to also strike out all of this other.

Dr. Tomlinson: "Such other branches as the board may deem advisable," and also "all answers concerning the treatment peculiar to any school of medicine," etc.

The President: The whole of that?

Dr. Tomlinson: Only those two—"and such other branches as the board shall deem advisable" and then beginning at "all answers concerning the treatment peculiar to any school of medicine shall be examined, and their sufficiency passed upon, by the members of the board belonging to that school."

Dr. Hall: Has it cut the homeopaths and eclectics off the board?

Dr. Tomlinson: Not at all, only we don't examine the subjects supposed to pertain to them.

Dr. Tomlinson's amendment, having been duly seconded and put to vote, prevailed.

Dr. May: I move to strike out the words "three sessions shall suffice" after the words "prior to the year 1899," and insert "any physician who is licensed to practise in any state having reciprocity agreements with this state, shall be admitted to examination, and be licensed to practise if said examination prove satisfactory, without regard to the number or length of terms he may have attended a medical college."

The motion to amend offered by Dr. May, was duly seconded and upon being put to vote, prevailed.

Dr. Wm. Reid: I would like to call your attention to the last sentence in that section, which reads: "The board may refuse to grant a license to, or revoke the license of, any person guilty of immoral, dishonorable, or unprofessional conduct, but subject to the right of the applicant to appeal to the governor." This, gentlemen, I note has not undergone any change whatever. I wish to say that as the present law stands that might just as well be stricken out altogether unless it is amended, because under the present conditions we can never obtain the conviction of any person. We all know there are men who are downright guilty of homicide, and yet you never heard of their licenses being revoked, simply because under present conditions

you can never get any one who submits to an illegal operation to come forward and give her evidence. Therefore, we cannot convict. As to unprofessional conduct in other respects, you would simply be laughed at if you were to make a complaint before the State Board of Medical Examiners with regard to a medical man coming to your patient and telling him that he would do his work cheaper, or that you were not giving the right treatment—you would simply be laughed at if you should bring that as a charge. I have in mind several cases of this kind at the present time, and it appears to me that this should be brought up now. When a man comes into your field and advertises that he is going to work cheaper than the regular rates and that he will do so and so, that man is a midnight marauder, and he is just as black as the man who crawls up your stairs at night with a knife in his hand.

I recently had occasion to have some dealings with a medical gentleman and I asked for reference—some business or professional reference—on account of his being a perfect stranger to me. He turned upon me with scorn and said: "I have been a practitioner in Minnesota for thirteen years; that is enough." I have never found any one who could give me a good word regarding this same gentleman. He has been in thirteen different towns in this state. I have never yet heard a good thing of that man, but he says: "I have been thirteen years a practitioner in Minnesota and that is enough." He is using the profession for his own ends.

I propose that we change that so as to define what is dishonorable or unprofessional. As it is now, any man can crawl out. I propose to insert certain words in that sentence, something of this kind, defining the words "dishonorable or unprofessional conduct," to read: "dishonorable or unprofessional conduct to apply to any breach of the rules of medical ethics as laid down by the American Medical Association." I think those rules are very good. As medical men, we all ought to possess a highly enlightened conscience. We ought to be altruists toward one another. I think no man has a right to a position in our profession unless he is a perfect gentleman in every respect. A man who will take advantage of his brother practitioner in any way is not fit to be a member of the profession. (Applause.)

I think if those words were defined in that way, we could call special attention to them, and they would have more power. I have been read-

ing several cases that have been brought before the state court simply because the jury wrangled over the meaning of the words "dishonorable and unprofessional." Therefore, I propose this amendment so as to make the language more explicit with regard to that subject. I would like to hear remarks from others regarding this matter.³

A Delegate: I would like to know whether an amendment referring to the rules of the American Medical Association would not in a law make it unconstitutional and defeat the law. It seems to me that it would.

A Delegate: This matter of dishonorable and unprofessional conduct is important, but I think the question of immoral conduct a great deal more important. We have in this state and in our district a man that a woman confessed on her death bed had used instruments and brought on an abortion, and she confessed that before the county attorney, who was called in, and two of our licensed physicians of the state, reputable physicians, and before her priest; and still that man is practising up there. He has been brought up twice before a coroner's jury, and still he is practising. He travels from one town to another and practises wherever he is located. We brought this matter before the State Board of Medical Examiners. He is a morphine fiend, and is a drinking man. We tried to see if that man could not be prevented from practising. We have a few of those men who are criminal abortionists, and still nothing was done to prosecute them. I think that is a case that ought to be looked after more than if a man comes in and works cheaper. A man is judged by the standard he adopts—that matter will settle itself. But this other question of prosecuting these immoral practitioners—if you could know the work that that man is guilty of—not unprofessional, but immoral conduct. I think we ought to have the State Board prosecute just that class of men. Also, these men who are traveling around and claiming to be professional.

The President: I will agree with you that this clause is an important one to be in here. I do not think we would better abolish it. It is very important to have our State Board of Medical Examiners revoke licenses. We have revoked some licenses in this state already. I do not think it will be policy to strike that out. We must be in position to act, if we want to act. The trouble has been that our State Board of Examiners do not seem to have realized the necessity of prosecutions. These cases should be

brought before the State Board, the evidence collected, and the prosecution pushed.

Dr. Andrews: There being no amendment before the house, I move the adoption of Section 2296 as a whole.

The motion, after being duly seconded, was put to a vote and prevailed.

Dr. Andrews then read Section 3 of the bill, amending Section 2300 of Chapter 35 of the Revised Laws for the year 1905.

Dr. Hall: Should not that read "any person" instead of "physician?"

Dr. Andrews: Yes, that should be "any person." I thank you for the suggestion.

Dr. Hall: There is one thing in that section that I do not think is covered. The law in defining the practise of medicine provides that the practitioner shall receive some compensation for so doing. If they do not receive compensation they are not practitioners, and the law cannot touch them. Like this Dr. Till in Wisconsin. He does not require them to pay anything. He gives the small service that he renders for nothing, and they donate him whatever they please. That man might come in here under our law, not taking anything for his work, and he could practise medicine in the same way that he does in Wisconsin. We could not prevent it. He does not advertise; he simply does the work, and the people come to him.

Dr. Davis: There is nothing in this law to warrant it. There is nothing there about compensation.

Dr. Hall: I know that. How do these men practise then? They do the same thing here.

Dr. Davis: Our present law provides that they shall not practise medicine for a fee. "For a fee" is purposely left out of this bill.

Dr. Andrews: He must give good and sufficient bond for the faithful performance.

Dr. D. N. Jones: I wish to call attention to one portion of this section: "It shall be the duty of the Board to prosecute any one violating any of the provisions of this subdivision, provided complaint shall have been made in writing, signed by two reputable citizens residing in the county where such violation shall have been made, and in conducting such prosecution the Board shall be authorized to employ such attorney or attorneys as it shall deem proper." I believe it has been the experience of the Board of Examiners that one reason they have not been able to prosecute is that they have had no funds with which to carry on a prosecution. Now, the funds that come in from conducting the ex-

aminations are the minimum of remuneration for the time they spend. In many instances I think the physicians who are serving as members of that Board are donating a great deal of their time and service as a matter of honor. It has always looked to me that this Association ought to do one thing. The State Medical Association of the state of Minnesota ought to, by some means, create a fund for the purpose of carrying on prosecutions. Our medical boards could conduct or direct prosecutions, but I do not believe it is right to ask them to obligate themselves to defray all the expenses of prosecutions. I think that has been the great drawback to our law so far as the enforcement is concerned. Many of you, no doubt, have served on that Board. I once served for a while myself, and you know what your experience was while you were on that Board. We did not feel like obligating ourselves to prosecute cases without funds in sight, more than what comes in from examinations. The funds coming in from that source were so small that it was no remuneration whatever for the time we spent, besides the annoyance. I think it amounts to one hundred or one hundred and twenty-five dollars a year, and that is a very small remuneration for the amount of time given. You get much better pay for the same time in other lines of your profession. Unless things are paid for you do not put the spirit into them that you would if you were properly paid. The main point is this—I do not think it is fair on the part of the profession in this state to expect or to ask the State Board of Medical Examiners to carry on the prosecutions of complaints that come in and defray the expenses. They have simply to go down in their pockets and pay the expenses.

Dr. A. E. Spalding: I move the adoption of Section 2300 as read.

A Delegate: I wish to add my word to what Dr. Jones has said about the absolute futility of this clause providing that the Board shall prosecute, without providing funds. There is no member who receives more than one hundred or one hundred and twenty-five dollars over and above his traveling expenses, and that uses up all the funds that come into this Board. How is the Board to conduct any prosecutions? Suppose that in some town in the far part of this state somebody is practising medicine irregularly. In nine cases out of ten the Board has no evidence. I mean to say, they have nothing that will hold in court. The man is there, and he has hung out his sign;

but that does not "go" in court at all. It devolves upon this Board to secure the evidence and bring the matter to trial in the county in which the offense is committed. The present law provides that the county attorney shall bring prosecutions for those the same as for other offenses. I know of no reason why we should make a difference between the infringement of the medical and other laws. Practically as this law stands, it is absolutely and entirely impossible to do anything with it; for the State Board to secure the evidence and to spend the time that is necessary to bring this thing before the proper channels in the county court, particularly when in very many cases the people in the town sympathize with this irregular practitioner—a number of people in the town where this man lives are friends of his; they don't understand the importance of medical laws; he is good enough for them; they want him to stay—it is very difficult, indeed, to do anything with people of that class. That has been tried. Dr. Linjer told me that the Board brought some fifty prosecutions and did not succeed in getting a single conviction. I do not think the gentlemen who drew this bill had considered sufficiently the difficulty.

Dr. Andrews: In explanation of that, the committee did consider it. In the first place, we cannot provide by law passed by the legislature that the state shall furnish funds for the prosecution, and the fatal feature of the old law is requiring county attorneys to do it. The county attorney is a politician. This provides that the Board shall employ their own attorney. I do not see how this law can very well obligate the State Association to pay this, but I do feel that if this law passes that the State Association, now having plenty of funds, will appropriate something for this purpose, but I do not see how we can incorporate it in here.

Dr. Jones: I think that this Association in some way could set off a certain fund or certain amount of money to be used, when so directed by the State Board of Medical Examiners, in cases where the prosecution is a just one, but that the money ought to be spent under the supervision of some board, and I would suggest that if there was any fund created that it be put under the Board of Councilors, but that no funds be used until recommended by the Board of Medical Examiners.

Dr. Andrews: That would be a subject for consideration, but I think the State Association ought to do something towards this.

The President: Are you ready to vote upon the section?

Dr. Davis: I want to offer a resolution in place of this vote, disposing of the whole bill. We have had a full and complete discussion of the bill. We have got a sort of a jumble here. The bill certainly as it leaves us should never go before the legislature. Moreover, the legislature is to be elected next month. If we are going to do anything about getting our bill through we should begin with the candidates. There is no possibility of getting this bill through the present session, and I think it would hardly be fair to try to put it through without having the profession over the state know the sort of a bill we have decided on. Therefore, I move that the special legislative committee be continued, with an appropriation of one hundred dollars for expenses; that the bill be re-submitted as at present amended to the component medical societies, with the request that they offer amendments if they see fit; that the committee on special legislation report the bill so amended to this House of Delegates at its next session.

These amendments could then be submitted to an attorney in order to make them legal and binding. We have had the experience that the attorneys find flaws in our work. Then it could be sent out to the component societies. If they have any comments to make they have a year in which to do so. And the committee resubmit it next year for final action. Then we have a whole year before the next legislature meets, which gives us plenty of time to do our work on the bill with the candidates for the legislature before the election instead of after. Therefore, I make this motion, referring the bill back to the committee.

The motion was duly seconded and unanimously carried.

The President: We will now listen to the reading of the report of the Committee on Medical Defense appointed last year.

Inasmuch as the report of the committee had been printed in circular form and distributed among the members, it was unanimously agreed to waive the reading of the entire report. By consent of all delegates present, the Secretary then read that portion of the report outlining the amendments.

Dr. Andrews: Do I understand by this that each member of the Association shall be assessed one dollar, but in case he does not pay that assessment he simply is not entitled to the protection, he does not become delinquent in his

dues because of that? It does not affect him as a member of the society in any way?

A Delegate: I think the idea is that the dues shall be three dollars in place of two dollars.

A Delegate: I would like to ask Dr. McCarthy whether it was the idea of the committee to make it optional whether he shall avail himself of this defense. I understand that was not the idea of the committee.

Dr. J. W. McCarthy: It was the idea of the committee that every member of the State Association should pay the dues; not optional.

The President: If he refuses to pay this, he ceases to be a member of the Association. It was not optional; it must be paid.

Dr. F. U. Davis: It would cause an endless amount of confusion and book-keeping if we made this matter optional. The matter is simply an increase of the dues from two dollars to three dollars, and a third of the dues—that is, one dollar—goes into a special fund.

Dr. R. C. Dugan: I am not a member of the House of Delegates—

By unanimous consent, Dr. Dugan was given permission to speak.

Dr. Dugan: There seems to be a question about the wording of this thing. It was the sense of the committee that this should be a part of the dues paid the State Association. It was the feeling of the committee that it was absolutely useless to have it unless the whole Association went into it. If it was left optional, it would be an absolute failure. We have had that once before, if you will remember, organized as a sort of an adjunct, that was not a portion of the Association, and more from carelessness than anything else there were not enough took an interest to make it self-sustaining. Unless it is a part of the Association and every member assists, it might just as well be dropped as useless.

Dr. Bell: It seems to me this is a very important matter and a very radical change, as a whole. I question whether we have a right to legislate in this way without at least consulting the component societies making up this Association. It seems to me this matter ought to be submitted, after we have threshed it out, to the component societies. It is a pretty radical change to insist that a member shall pay three dollars in place of two dollars, or whatever sum it is. In this radical legislation I think we ought to move cautiously.

Dr. Tomlinson: I would like to amend the motion that the question be referred to the coun-

ty societies for their approval before any final action is taken on it, because, as Dr. Bell says, it is a pretty serious proposition, and if the county societies went back on us, it might result in cutting our membership in two.

Dr. F. U. Davis: When the county societies elected us to represent them they certainly expressed some confidence in our judgment in matters of this kind. If we refer this back to the component societies, we simply delay for a year what it seems to be the general opinion is a good thing. I hope this matter won't go back to the component societies without considerable discussion.

A Delegate: I think there are two questions to come up here: first, have we a right to make an assessment upon members of the Association? If we have the right, there is no question but they must pay it. If we have not the right, can we make an amendment to our By-laws without having the matter lay over twenty-four hours? If we could decide on those two questions we could go ahead with this work. I am in favor of this proposition, but, on the other hand, unless we can make all the county societies pay, you will easily see that the fund will be so small that we cannot get sufficient to employ a good attorney to look after our interests. I would like to ask the President whether we have the right as a House of Delegates to assess the members of the component societies a dollar.

The President: I think we have a right to amend the By-laws. In our county society in St. Louis County we have an old membership fee of three dollars. If the State Association called upon us for three dollars, there would not be anything left for the county society's support. But we have recently amended our By-laws in St. Louis County by increasing from three dollars to five dollars a year. If we amend the By-laws of the State Association to give away another dollar, it would leave only two dollars in our treasury for our own purposes. I think that is going to create a hardship in many societies, unless they can raise their fees.

Dr. H. P. Dredge: I thought that motion to amend must lie over twenty-four hours.

The President: A motion to amend the By-laws has to lie over twenty-four hours. This proposition was brought before us yesterday, and we put it over until today. I should judge from that that we are entitled to amend them as we see fit to do.

Dr. Knights: It seems to me that whatever our rights may be in this matter, it is expedient

that we should not act in any way hurriedly or secretly about this question. This is an important matter, to which there are a great many aspects. This committee has done a lot of thorough work here and has presented us a report that is complete. It is entirely too complete to attempt to digest in twenty-four hours, and I understand from members of the committee that they will be satisfied to have this matter lie over for consideration and be presented to the component societies.

If it would be in order, I would like to move you that this matter rest with the committee, appearing in the minutes, and that it be referred to the component societies for discussion, and that the component societies may instruct the delegates before they come to the meeting of this body next year.

The motion was seconded, and, on being put to a vote, prevailed.

A Delegate: Will it be the duty of the delegates present to take up the matter with their respective societies, or will it be sent out by the Secretary?

The Secretary: I will take the matter up with each society and see that they are notified.

Dr. Andrews: I have a resolution I want to introduce, and I hope that it will be made a special order of business.

One of the most sacred missions on earth is the care of the sick, and this applies with increased force to major operations.

To the skill and honesty of the physician is entrusted the health and precious life of the individual. His advice and recommendations are regarded by the suffering patient and his friends with a degree of trust and confidence which obtain in no other profession or business, not excepting the holy calling of the ministry. To betray that trust is unmanly, unprofessional and far beneath the dignity of the high honor of the medical profession; and yet it is a lamentable fact that patients are sold to the highest bidder, and this regardless of his skill and practical knowledge. This is commercialism of the baser sort. It is a direct violation of the principles of medical ethics. It has been the channel through which many an unfortunate has been sent to an untimely grave. Shall this 'commercialism, this compounding of fees, continue to exist in the noble profession of the great State of Minnesota?

Resolved, By the House of Delegates of the Minnesota State Medical Association, in regular convention assembled in the City of St. Paul, that we most deeply deplore and deprecate the commercialism that has crept into the medical profession of this state, placing the price in dollars above the sacred life of the individual and sapping the life-blood of the honor of the profession.

Resolved, That we unqualifiedly denounce this practice as unmanly, dishonorable, and demoralizing to the profession.

Resolved, That we most earnestly recommend that each and every component society of the State Association take definite action against this practice, making it an offense equally great against him who gives and him who takes, and providing that evidence against any physician or surgeon for giving or accepting any money consideration for securing business, be a sufficient cause for a peremptory expulsion from the Medical Societies to which he belongs.

Dr. Andrews: I move the adoption of this resolution.

Dr. Workman: I second the motion.

Dr. Andrews: Because of the lateness of the hour and the smallness of the number here, would it not be well to make the consideration of this resolution a special order of business tomorrow?

The President: Everybody is in sympathy with the resolution. I don't see why we cannot adopt it now. Personally, I do not think we can make it any stronger.

The resolution, on being put to a vote, was carried unanimously.

Dr. Bell: Have we reached unfinished business?

The President: If there is anything to be considered.

Dr. Bell: The amendment I offered yesterday to the By-laws would be in order. I will ask the Secretary to read it.

The Secretary: "Moved that Chapter 9 of Section 5 of the By-laws of the Minnesota State Medical Association be amended to read as follows: Each county society shall be the judge of the qualifications of its own members, but as such societies are the only portals to this Association and to the American Medical Association, every reputable and legally registered physician who does not practice or claim to practice, or lend his support to, any exclusive system of medicine, shall be entitled to membership; provided, however, that certain physicians who occupy teaching or research positions in recognized medical schools, and who do not wish to be licensed to practice medicine, may acquire membership in the State Association and component societies."

Dr. Andrews: I move the adoption of the amendment.

Dr. Bell: I second the motion. So that all may understand the object of the amendment, I will say it is simply a change which will enable men engaged in teaching or in research work to become members of the component societies and members of the State and National

Associations. They are men we desire to have with us.

The motion, being put to vote, was carried unanimously.

On motion of Dr. Andrews, duly seconded, the Secretary was instructed to send a copy of the resolution adopted in reference to commercialism to every component society in the state.

At the request of Dr. McCarthy, the chair appointed Dr. W. T. Adams, of Elgin, to serve on the Medical Defense Committee in the place of Dr. McGaughey, deceased.

On motion of Dr. Andrews, the House adjourned until 9 o'clock Thursday morning, October 8th.

THIRD SESSION, THURSDAY MORNING, OCTOBER 8TH

Pursuant to adjournment, the House of Delegates was called to order by the President at 9 o'clock A. M., a quorum being present.

The minutes of the previous session were read by Secretary McDavitt and approved.

After hearing the supplementary report of the Committee on Credentials, the President announced that the first order of business was the election of officers, and that nominations were in order for the office of president.

Dr. Rollins: I desire to place in nomination a man who is eminently qualified to fill this high office of the Association; a man who is purely a product of Minnesota. His parents settled early in this state. He knows all the ups and downs of a farmer's life; attended the public schools; went through the State University; and for the past seventeen years has been attending the state meetings of this Association. I take pleasure in naming Dr. Rollo C. Dugan.

Dr. Adams: I take pleasure in seconding the nomination of Dr. Dugan. We know him in our section as being one of the most progressive men and one who has been doing good work in the profession; a man who has been an important factor in our medical societies.

Dr. Warren L. Beebe: I have attended the last twenty-seven meetings of this society, with one exception. For the last three or four years there has been an unwritten law that the presidency should rotate between St. Paul, Minneapolis and the country. The last four years, three out of four have been from the country districts, and it occurs to me that we from the country should not be so selfish.

I desire to place in nomination the name of one of the oldest members of the Association,

who has always been active in the society; a man who really should have been, from my standpoint, elected president at the time the last Ramsey County man was elected. He was then thrown down in the house of his friends. Last year his name was suggested at Duluth, but we were prevailed upon to withdraw his name. I desire to nominate, and it is a pleasure to nominate, Dr. Cornelius Williams, of St. Paul.

Dr. Wm. Davis: On behalf of the delegation to the House of Delegates from Ramsey County, which is entirely unanimous, I want to second the nomination of Dr. Williams. He has been for many years one of our leading men; one who, we feel, has been passed by on several occasions when he was entitled to the honor of the position of president of the State Association.

There being no further nominations for the office of president, the chair appointed Dr. Robinson and Dr. Dennis as tellers.

Upon count, the vote resulted in seven votes being cast for Dr. Dugan and seventeen for Dr. Williams.

On motion of Dr. Adams, the vote was declared unanimous.

Dr. Braden then presented the name of Dr. C. W. More, of Eveleth, for first vice-president, and on motion of Dr. Tomlinson the Secretary was instructed to cast the ballot of the Association for Dr. More.

Dr. F. U. Davis, of Faribault, presented the name of Dr. M. L. Mayland, of Faribault, as second vice-president. On motion of Dr. Tomlinson, the Secretary was instructed to cast the ballot of the Association for Dr. Mayland.

Dr. Robertson presented the name of Dr. L. C. Weeks, of Detroit, for the office of third vice-president. On motion of Dr. Tomlinson, the Secretary was instructed to cast the ballot of the Association for Dr. Weeks.

Dr. Andrews placed in nomination, and on his motion the President was instructed to cast the ballot of the Association for Dr. Thomas McDavitt for secretary.

Dr. Tomlinson presented the name of Dr. R. J. Hill, of Minneapolis, for treasurer, and on his motion, the Secretary was instructed to cast the ballot of the Association for Dr. Hill.

The terms of councilors for the third, sixth and eighth districts having expired, the following were chosen:

Third District—Dr. J. L. Rothrock, St. Paul.

Sixth District—Dr. A. E. Spalding, Luverne.

Eighth District—Dr. A. O. Bjelland, Mankato.

The Secretary then announced that in view of the death of Dr. McGaughey, who had one more year to serve at the time of his death, and in view of the expiration of Dr. Spalding's term, there were two delegates to be elected to the American Medical Association. He also stated that since it had been customary for alternates, when their terms expired, to serve as delegates, Dr. Arthur Sweeney would be eligible as delegate, but that it would be necessary to elect two alternates, since Dr. Ecklund had been refused by the American Medical Association on account of his not having been a member of that association a sufficient length of time.

After discussion, it was deemed advisable to place Dr. Sweeney's name in nomination and vote upon the same in a formal manner; and on motion of Dr. Tomlinson, the Secretary was instructed to cast the ballot of the Association for Dr. Sweeney as delegate to the American Medical Association for two years.

On motion of Dr. Adams, Dr. R. C. Dugan, of Eyota, was chosen to serve as the second delegate for one year.

On motion of Dr. A. E. Benjamin, Dr. George D. Head, of Minneapolis, was chosen alternate for two years.

On motion of Dr. Wm. Davis, Dr. C. F. McComb, of Duluth, was chosen alternate for one year.

Dr. F. H. Rollins: I desire to have my alternate from Winona County seated as a delegate. He is quite an orator, and I am sure he will have something to entertain you with when he gets the floor. I desire to retire in his favor at the present time.

On motion of Dr. Tomlinson, Dr. C. P. Robbins, of Winona, was seated.

Dr. C. P. Robbins: I do not know whether it is opportune now to give you an invitation, but in behalf of the city of Winona, and in behalf of the Winona County Medical Society, we desire very much that the State Medical Association meet next year in Winona. We are the fourth largest city in the state. We have not asked for the meeting of the Association since 1871, and we feel that we are entitled to the meeting there next year.

Dr. Davis: I understand there is no motion before the house. May I make a motion now? I notice in the report of the Treasurer, as read, that we now have considerable money on hand—some four thousand dollars—and the Treasurer

is bonded in the sum of three thousand dollars. I, therefore, am offering an amendment to the Constitution, or the By-laws. I am sorry that I did not get it in yesterday, so that it could be acted upon. The present By-laws read that the Treasurer shall give a bond in the sum of three thousand dollars. I wish to amend that by striking out that sentence and inserting "The treasurer shall give bond in such sum as the Council shall consider sufficient." That will provide for all time and increase the treasurer's bond as the funds of the Association increase. The section goes on to say that "The Council shall execute said bond with some indemnity company at the expense of the Association. He shall demand and receive all funds due the Association, together with the bequests and donations." I want to add to that "He shall invest the funds of the Association in such securities as the Council shall direct, provided that no investment of the funds of the Association shall be made or changed except upon a written order of the treasurer, signed by at least four-fifths of the members of the Council." The rest stands as before. Since we are getting so much money in the treasury, it might just as well be beginning to bring us in some interest as to stand idle. This provision puts it in the hands of the Council. I think this would safeguard it sufficiently by making it impossible to invest the funds of the Association without the consent in writing of four-fifths of the councilors. That would insure deliberation.

Dr. Braden moved to suspend the By-laws in order to consider Dr. Davis' amendment. After much discussion, it was not deemed advisable to suspend the By-laws, and Dr. Braden withdrew his motion, with the consent of the second.

The Secretary: This suggestion came from the Treasurer. I don't know that Dr. Davis knows that, but Dr. Hill was not able to be at this meeting because he has been very ill from infection. He has been in bed and has been having a very dangerous time. In a telephonic communication the other day he suggested the propriety of giving the Treasurer or some committee, or somebody—he didn't care who, but somebody—legal authority to invest some of our funds.

Dr. Bell: Would it not be possible, in view of what the Secretary has said, to instruct the Treasurer at this time to make an investment? Without amending the By-laws, can we not instruct the Treasurer or any other officer, if we so desire?

Dr. Tomlinson: Over the heads of the Council, you mean?

Dr. Bell: I do not know that it can be done without the Council's approval.

Dr. Tomlinson: If it is deemed desirable to take this up this year, might we not suggest to the Council that they advise the Treasurer as to the investment, if he wants to make one. We cannot instruct the Council, but we can advise them, and they can act on their discretion. I do not mean to say that it is necessary, but if the House deems it necessary.

The President: Do you want to put that in the form of a motion?

Dr. Tomlinson: Not unless it is wanted.

Dr. Davis: I am on the board of trustees of the Ramsey County Medical Society, and we find it our experience that the investment of funds is a matter for deliberation. We can hardly in this body at this time pick out an investment and instruct the Treasurer to make such and such investment. On the other hand, if we leave it to his discretion to make the investment, we ask him to take a great deal of responsibility for one man. I think the whole thing should be left for another year, and then if the Council, when they get the authority, wish to make an investment, let them make it. We only lose a small amount of interest, and to undertake to settle this matter now and give the Treasurer definite instructions I think will be impossible.

The President: I agree with you.

The report of the Committee on Necrology was then read, as follows:

REPORT OF COMMITTEE ON NECROLOGY

To the Officers and Members of the Minnesota State Medical Association.

Gentlemen: The secretaries of the various local and county societies have reported to your Committee on Necrology, for the year preceding this meeting, the death of eleven members of the Minnesota State Medical Association.

The uncertainty of life is here forcibly demonstrated, four of our members having died suddenly, and one after an illness of five days.

Dr. Gottfried Stamm, St. Paul, died September 15, 1907.

Dr. Winfield Scott Laton, Minneapolis, died October 6, 1907.

Dr. Ole Edward Linjer, Minneapolis, died December 11, 1907.

Dr. J. P. Humes, Winnebago, died March 9, 1908.

Dr. David H. Lando, formerly of St. Paul, died in Vienna, May 18, 1908.

Dr. Jacob E. Schadle, St. Paul, died May 29, 1908.

Dr. Arne Nelson, Fertile, died May, 1908.

Dr. Otis S. Hutchins, Canby, died May, 1908.

Dr. Ingeborg Taustrom, Finlayson, died June 5, 1908.

Dr. H. L. Brynildson, Vasa, died June 29, 1908.

Dr. J. B. McGaughey, Winona, died September 27, 1908.

Dr. Gottfried Stamm was a native of Switzerland, born November 7, 1843, at Schaffhausen. He was the son of a physician and a graduate of the University of Berne, in 1867. His death in St. Paul, on September 15, 1907, marked the close of forty years of active practice, about six years in his native city and thirty-four years in St. Paul. For many years he was Swiss consul for the Northwest. In 1880 he married Miss Louise Pfaender, of New Ulm, who, with five children, survives him.

Dr. Winfield Scott Laton, one of the best-known physicians in Minneapolis, was born at Owl's Head, Maine. He graduated from the Long Island College Hospital; practiced medicine in Texas about four years; moved to Minneapolis in 1881, where he continued practicing, paying special attention to laryngology and rhinology and diseases of the lungs, in which he was regarded as an expert. He was identified with the College of Medicine and Surgery of the University of Minnesota from 1882 until 1905, when he resigned. Dr. Laton died suddenly from apoplexy on the afternoon of October 6, 1907, aged about 56 years.

Dr. Ole Edward Linjer, aged 47, died suddenly December 11, 1907. Dr. Linjer was born in Vernon County, Wisconsin, June 11, 1861. He moved to Minneapolis in 1876, attended the public schools and Niles' Classical School at Rochester. He graduated from the College of Medicine and Surgery of the University of Minnesota in 1889. He practiced medicine in Superior, Wisconsin, for a number of years. He was a member of the Minnesota State Board of Medical Examiners in 1905-6; was appointed city physician for Minneapolis in 1905, which position he held at the time of his death. Dr. Linjer was a prominent Mason. He is survived by three children.

Dr. David H. Lando died suddenly after a surgical operation in Vienna, May 18, 1908. Dr. Lando was born in Cleveland, Ohio, January

12, 1870, and came with his family to St. Paul when a child, where he received a high school education. He was a graduate of the University of Michigan, 1897; served as an interne in the city and county hospital; practiced medicine in St. Paul a few years; studied in Vienna from 1903 to 1905. He returned to Vienna in 1907 as assistant to Prof. V. Eiselberg's clinic, where he was engaged at the time of his death. Dr. Lando was especially devoted to surgery and surgical pathology, and he had done some original work of a high order.

Dr. Jacob E. Schadle died at St. Joseph's Hospital, St. Paul, May 29, 1908, of cerebral thrombosis. Dr. Schadle was born at Jersey Shore, Pennsylvania, June 23, 1849, and was of German ancestry. He received a normal school education at Millersville; graduated from the Jefferson Medical College in 1881; practiced medicine in Pennsylvania for eight years, where he made a record for himself by the skill, wisdom and courage he displayed in the handling of a widespread epidemic of smallpox and stamping out the disease. In 1885 he reported the successful treatment of three cases of mushroom poisoning by administering large doses of atropine. About 1889 he moved to St. Paul. He was a specialist in diseases of the nose and throat and the author of many medical papers. For many years he had been professor of diseases of the nose and throat in the medical department of the University of Minnesota. His wife, the daughter of Dr. H. D. Miller, of Mifflinburg, survives him.

Dr. H. L. Brynildson was born in Skien, Norway, July 29, 1850. He came to the United States in 1869; practiced medicine in Vasa, Minnesota, for many years. He was married December 10, 1877, to Helen Rollis. His death occurred June 29, 1908, from cancer of the stomach. He is survived by a widow and six children.

Dr. Arne Nelson, of Fertile, Minnesota, died May, 1908. He was the oldest physician in Polk County.

The unexpected death of Dr. Otis S. Hutchins, of Canby, Minnesota, demonstrates the constant danger that surrounds the physician and surgeon. Dr. Hutchins had operated upon a case of suppurative appendicitis ten days before, and in some way, probably by rubbing his nose with his finger, he infected an abrasion in the nasal mucous membrane. He died in five days. Dr. Hutchins was born in Wisconsin thirty-eight years ago and graduated from Rush Medical

College in 1896. He had practiced in Canby since his graduation, twelve years ago. He attained a high standing in the community, and his memory will long be honored by the men and women who came into intimate contact with him, professionally or socially. He died in May, 1908.

Dr. J. B. McGaughey, of Winona, Minnesota, died suddenly Sunday evening, September 27, 1908. He was born in the state of Pennsylvania, December 1, 1842. His father moved to the southern part of McDonough County, Illinois, in 1849 or 1850, his boyhood being spent on the farm; he received his education in the district schools and in the old McDonough County College at Macomb, Illinois. He entered the volunteer service in the Civil War early in 1862, in the Tenth Missouri Cavalry, afterwards being transferred to the First Alabama Cavalry, where he served until mustered out, in October of 1865. He was captured in April, 1863, and spent sixty days in Libby prison, being then exchanged and returned to his regiment. The winter of 1865 he took medical lectures at the Berkshire Medical College, Pittsfield, Mass. The winter of 1866-7 he spent at Ann Arbor, graduating there in the spring of 1867, and settling in Winona in April, 1867, where he practiced continuously until his death.

Dr. McGaughey was very prominent and successful in his work in southern Minnesota and the adjoining country in Wisconsin. From his first entrance into the profession he was much interested in society work, having joined the state society within a year or two after its organization in this state, in 1869. He was president of the State Association in 1884-5, and there have been very few meetings since he joined at which he was not present, and the transactions of the Association show that he was one of the workers. He joined the American Medical Association in 1872, and has been a member continuously since that time, and has attended its meetings regularly. He was appointed a member of the Minnesota State Board of Health in 1904, and elected vice-president April 30, 1907, which position he held at the time of his death. In the death of Dr. McGaughey the profession of Minnesota has lost one of its grandest men, morally, socially and professionally.

Dr. J. P. Humes, who passed away at Winnebago, was a charter member and the first president of the Blue Earth Valley Medical Society. Dr. Humes was born in Crawford, Pennsylvania, January 16, 1837. He was of Scotch

descent, the son of John C. Humes and Mary E. (Griffeth) Humes. He received his academic education in his native state; taught school in Illinois and Pennsylvania; came to Minnesota in 1857; graduated from Rush Medical College in 1866, and practiced medicine until his death, March 9, 1908. He was married to Miss Emma McColley in 1867, who, with five children, survives him. Dr. Humes was active in Masonic circles.

(Signed)

C. W. MORE,
Committee on Necrology.

On motion of Dr. Andrews, the report was accepted.

Dr. Andrews then offered the following resolution:

Resolved, That the House of Delegates, in regular convention assembled, hear with deepest regret of the illness of our honored Treasurer, Dr. Hill, and hereby extend to him our sympathy and the hope for his speedy recovery.

On motion of Dr. Tomlinson, the resolution was adopted.

The Secretary: Owing to the unusual prominence of our ex-President, Dr. McGaughey, I think a motion would be in order instructing the Secretary to set aside a page in our records in his honor.

Dr. Tomlinson: I desired very much to make that motion myself. I have known Dr. McGaughey ever since I have been in Minnesota. I believe that all who knew him, who had the honor of his acquaintance and friendship, feel that the State Association cannot do too much to record this feeling for him and the honor in which he is held, and I desire to move that the Secretary's suggestion be carried out.

Dr. Tomlinson's motion, on being put to vote, prevailed unanimously.

Dr. Tomlinson: In my official capacity, and at the suggestion of several of the members, I want to call attention to the amendment of Dr. Bell, offered yesterday, with regard to the admission of medical teachers who are not licensed practitioners. The suggestion has been made that in making these teachers full members of the State Association we were departing from what was integral to the organization of the Association, and it has been suggested that instead of full members we make them honorary members of the State Association. And acting on that suggestion, I move to amend Dr. Bell's motion, changing the same from "membership" to "honorary membership."

Dr. Andrews: I rise to a point of order.

Dr. Bell: I presumed that was submitted and passed yesterday. I have no objection to the suggestion, and I think possibly it would be as well if changed. The amendment was passed yesterday.

Dr. Tomlinson: I will change that motion then and move to reconsider the amendment passed yesterday, as offered by Dr. Bell.

Dr. Andrews: I don't see the object in it. I cannot see where anything will be gained by it. We want men like Dr. Westbrook, for example. It applies to men just like that. Why not let it stand as it is?

A Delegate: I would like to know what the privileges of an honorary member are.

The Secretary: He has all the privileges excepting paying dues and voting and holding office. He can take part in the proceedings. He cannot be elected to the House of Delegates or hold office.

Dr. Bell: I am inclined to think that these honorary members should pay their dues with the rest of us. I confess I do not quite see the idea of the doctor's motion to reconsider it, if he wants paying members. If they wish the privilege of membership, they should be like the rest of us—pay their dues.

Dr. Tomlinson: I am personally in favor of Dr. Bell's amendment, but in making this motion I voice the opinion of a good many who asked me to do it, on the ground that the organization of the State Association was an organization of licensed practitioners; and if we departed from our fundamental principle we opened the way to further departure.

Dr. Warren Dennis: It seems to me the objection to making them full members is well taken. It seems to me that all should not be on exactly the same footing. I see no objection to making these gentlemen honorary members. They will have all the privileges of the Association so far as the scientific work goes, and that is what we want. I think it better to waive the matter of dues, if that be necessary.

Dr. Tomlinson's motion to reconsider, on being put to vote, was unanimously carried.

Dr. Wm. Davis: I move to amend Dr. Bell's amendment to the By-laws by inserting the word "honorary" before the word "membership" in the amendment.

The motion was seconded by Dr. Adams and, on being put to vote, unanimously carried.

On motion of Dr. Bell, it was agreed to ac-

cept the invitation to hold the next meeting at Winona.

On motion of Dr. Tomlinson, it was voted to leave the time of meeting to be fixed by the Council, it being the sense of the House of Delegates that the meeting be held during the fore part of October, 1909.

On motion of Dr. Tomlinson, the House adjourned.

GENERAL SESSION

THURSDAY AFTERNOON, OCTOBER 8 REPORT OF THE HOUSE OF DELEGATES

THOS. McDAVITT, M. D., Secretary.

Under a constitutional provision the Secretary on the last day of the meeting is required to report to the Association the transactions of the House of Delegates.

The House of Delegates has had three sessions. The membership of the Association was reported at 1,217, an increase of some five per cent. The number of members reported last year was 1,159.

The Committee on the Revision of State Medical Laws, of which Dr. Andrews was chairman, reported a very comprehensive set of amendments to our medical laws. After a long discussion in the House of Delegates this matter was considered of so much importance that it was decided by the House of Delegates to defer action for another year and continue the committee.

A very comprehensive report on the new system of medical defense was submitted by Dr. McCarthy, chairman of the Committee on Medical Defense, which has been adopted by a number of states and has been very successful in its operation. This seemed to meet with the almost unanimous approval of the House of Delegates, but it was also so comprehensive in its scope and would necessitate such changes in our medical law that it was considered best, and the Secretary was so instructed, to refer it back to each component county society to receive instructions in reference what the action of the House of Delegates should be at the next annual meeting. There was a copy of the report placed in the hands of each member present, and it will also be printed in *THE JOURNAL* of the State Association.

The Committee on Necrology, which consisted of Dr. C. W. More, of Eveleth, reported a num-

ber of deaths occurring during the past year, among others that of Dr. J. B. McGaughey, of Winona, an ex-president and a member of many years standing of this Association, the memory of whose valuable and useful life will long be an inspiration to those to whom he was known. A page of the record was ordered set aside to the memory of Dr. McGaughey.

The House of Delegates at its meeting this morning elected officers for the ensuing year (see front page).

The next meeting of the Association will be held at Winona the first Wednesday and Thursday in October, 1909.

Dr. J. T. Rogers, (chairman pro tem): It is my pleasant duty to introduce to you our new president, Dr. Cornelius Williams, of St. Paul. (Applause.)

ACKNOWLEDMENT BY THE PRESIDENT ELECT

CORNELIUS WILLIAMS, M. D., St. Paul.

This position came to me somewhat like the traditional bolt from the clear blue sky. I did not know anything about it until last evening, and therefore I am naturally, as great orators always are, totally unprepared. I cannot make a speech, and I would not take up your time if I could, because I conceive that to be one of the greatest evidences of the fitness of my humble self for this exalted position.

I cannot help but feel very much honored in my election as president of the Medical Association of Minnesota, which numbers among its membership some of the best and truest and some of the most skillful physicians that can be found anywhere. This Association contains within its membership men that have made a record for themselves, and they are known, not only in their own country, but throughout the world. As a gentleman remarked to me upon the death of one of our old time members, "Physicians are mortal." "Yes," I replied, "but a few of them are immortal; the works of those men will live when they themselves are forgotten."

I thank you again most heartily for the honor you have done me, feeling myself entirely unworthy, but I promise you to do the best I can. (Applause.)

Hypernephroma is distinguished from the other malignant tumors of the kidney by the very early appearance of hematuria.—American Journal of Surgery.

NOTICES

FOR SALE

Electric vibrator; has been used but little and is in first-class condition. Cost \$50; will sell for \$25. Inquire 340 Andrus building, Minneapolis.

POSITION WANTED

A nurse of four years' experience would like Institutional work. Best of reference given. No objection in going out of the city. Address Miss O. E. L. at this office.

POSITION WANTED

I would like a position in a doctor's office in the Twin Cities. High school graduate and can give the best of reference. Address B. B. at this office.

POSITION WANTED

Assistantship or partnership with surgeon or physician and surgeon by Minnesota graduate with one year's hospital position, four years' general practice, and post-graduate work. Best of references. Address C. D., care of this office.

PHYSICIAN WANTED

A physician is wanted at Seneca, S. D., which is 12 miles from the nearest town containing a physician. Population most Americans and Germans. Address D. C. Hobart, druggist, Seneca, S. D.

AUTO FOR SALE

A Holsmans auto, with removable rear seat and canopy top. In good condition; new chains and cables. The owner (a physician) is going to the city. Price \$450. Can be seen for demonstration at Spearfish, S. D. W. R. Irwin, drugs, Spearfish, S. D.

ENGAGEMENT WANTED

A woman nurse in good health and experience in the care of tuberculosis patients would like position as traveling companion, or as nurse to a patient going West for the winter. Address M. B., care of this office. Entirely satisfactory references will be given.

AUTO FOR SALE

A Ford auto; used only four months; as good as new. A 3-seated, 18-horse power, 1908 machine. Hardly a scratch on varnish or tires; full top; drop glass front, oil lights, large gas lamps.

and tools. Has had no accidents and needs no repairs. Will guarantee its condition. Address H. C. K., 2294 Commonwealth av., St. Paul.

PRACTICE FOR SALE

In a town of 600 inhabitants in the south central part of Minnesota, a practice worth \$2,100 a year; can be materially increased by a German-speaking doctor. Well settled community of Germans. Collections good. Office furniture, team, etc., \$1,000. Affords an excellent opportunity for a German-speaking doctor. Will sell or rent residence. Address M. G., care of this office.

FOR SALE

One of the largest and best equipped Massage Institutes in the Twin Cities for sale. Owing to the owner being obliged to leave city a great opportunity is offered for a responsible party. It is endorsed by the leading physicians. Address G. C., care of this office.

HOSPITAL POSITION WANTED

A nurse of five years' experience would like a hospital position; competent to take charge. References given. No objection to going to the country. Address C. M. S., care of this office.

SPECIAL NOTICE TO PHYSICIANS.—Practices bought and sold, and new physicians located. Correspondence solicited. The Druggists, Dentists and Physicians Exchange, Albert Lea, Minn.

PHYSICIANS' ATTENTION.—Drug-stores on easy payments, etc. Drug-store positions, United States or Canada. F. V. Kniest, Omaha, Nebr.

DOCTOR—If you want practical post-graduate work during fine season in the delightful city, write for particulars. New Orleans Polyclinic, P. O. Box 797, Post-Graduate Dept., Tulane Med. College.

THE SURGICAL TREATMENT OF EMPYEMA

P. T. O'Connor, of Waterbury, Conn., says that in the days of Hippocrates the method of operation for empyema by free incision down to the ribs, trephining the latter, incision of the pleura, and evacuation of pus was advocated by him, but until recently this was forgotten, and puncture and simple incision were made use of, with very bad results. Simple incision lacks the fundamental principles of modern surgery. The plan laid down by Hippocrates has stood the test

of time, except that we resect a portion of one or more ribs so that the surgeon may pass the fingers into the chest and by manipulations in the pleural cavity break up all adhesions, remove masses of coagulated lymph, and render expansion of the compressed lung possible.—Medical Record.

UNUSUAL CASE OF CÉREBROSPINAL MENINGITIS TREATED WITH ANTIMENINGITIS SERUM

H. N. Boeller, of New York, describes a case of interest because it had unusual symptoms and course for a meningitis, and yet was benefited by antimeningitic serum. The symptoms justified a diagnosis of rheumatism, there being redness and swelling of hands, wrists, and elbows, and effusion into the joints. Cerebral symptoms were not marked. Temperature varied between 101 and 104 degrees. After the rheumatic symptoms improved temperature was intermittent for twenty days, without malarial parasites in the blood, yet the patient was gradually losing ground. Lumbar puncture showed meningococci, and the use of the antimeningitis serum caused a rapid cure.—Medical Record, July 4, 1908.

THE MIRACLES OF THE TOMB OF B. FRANÇOIS DE PARIS

Joseph Collins, of New York, gives an account of the miracles which were worked at the tomb of B. Francois de Paris, in the seventeenth century, held at the time to support the pretensions of Jansenism. The cases cured were all of a hysterical nature, and it is very easy to explain the cures in the light of the modern knowledge of this disease. Most of them consisted of hysterical edemas, paralyses, anesthetics, and contraction of the visual fields. Later in the history of the cures the hysterical convulsive element became prominent and resulted in some revolting and immoral spectacles. The author gives minute descriptions of the most important miracles and explains the cures.—Medical Record.

THE USE OF BACTERIAL VACCINES

Harry Britenstool, of New York, has used with great success stock vaccines of mixed staphylococci in a number of cases, of which he submits the histories of three, all three patients having been subject for some time to recurrent abscesses or pustules.—Medical Record.

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THE PRESENT MANAGEMENT OF SMALLPOX IN MINNESOTA*

By H. M. BRACKEN, M. D.

Secretary and Executive Officer of the Minnesota State Board of Health

ST. PAUL

In 1904 a committee consisting of Drs. C. A. Lindsley, C. O. Probst and H. M. Bracken was appointed by this Conference to consider the question of the control of smallpox as set forth in the following:

WHEREAS, In many parts of this country a mild variety of smallpox is prevalent, and first cases in localities are quite generally unrecognized, therefore, their isolation by health officers is impossible, and isolation of the subsequent, very numerous cases involves excessive expenditures, and such domestic quarantine is not always effective in restricting the disease; and,

WHEREAS, In smallpox, isolation is practiced chiefly for the protection of the improvident classes of people, because, as a rule, smallpox attacks only the unvaccinated; therefore,

RESOLVED, That a committee be appointed by this Conference to consider this subject in all of its bearings, and report to this Conference at its meeting next year, whether or not, in states where and when the above described conditions exist, restrictive action and effort should be confined almost entirely to vaccination and re-vaccination as the most scientific and the most just measure for the restriction of the mild type of smallpox so widely prevalent in this country at the present time.

In 1905 a majority report was made to this Conference by Drs. Lindsley and Bracken as follows:

"Believing that all attempts to restrain smallpox by means of quarantine in a community not protected by vaccination will fail; that rigid quarantine in a well-

vaccinated community is unnecessary; that attempts to control the spread of smallpox by means of quarantine is unscientific, irrational, unsuccessful, and misleading; that in laying down strict rules for the quarantine of smallpox, sanitary authorities are favoring unscientific and illogical methods and are conveying false ideas as to safety, this Conference protests against further attempts to control smallpox by means of quarantine and requests the passage of compulsory vaccination laws similar to those of Germany, requiring (1) the compulsory vaccination of infants, (2) re-vaccination at puberty.

"The Conference should further place itself on record as requesting that steps be taken to secure a safe and efficient vaccine, and that vaccination be carried out by official vaccinators, acting under the authority of the various State Boards of Health; also, that steps be taken to secure a vaccine, the quality and efficiency of which are beyond question.

"Legislators and people should be advised as to their responsibilities in suppressing smallpox, and a time should be set for the total abandonment of quarantine as a means of attempting to control this disease."

Dr. C. O. Probst made a minority report in substance endorsing vaccination as the best known means of controlling smallpox, but still favoring a rigid quarantine for smallpox. The resolutions were finally side-tracked by a substitute offered by Dr. Holton as follows:

RESOLVED, That we as a Conference of State Boards of Health of the United States believe that vaccination is the only true and practical preventive of smallpox.

The smallpox question was later taken up by the Minnesota State Board of Health, and in

*Read at the Minnesota Sanitary Conference, St. Paul, October 6, 1908.

October, 1906, the following recommendation was adopted:

It having been established that smallpox will not occur in a well-vaccinated community, and that all attempts to restrain this disease in a community not protected by vaccination, by means of quarantine, will fail: that quarantine in a well-vaccinated community is unnecessary; that attempts to control the spread of smallpox by means of quarantine are unscientific, irrational, expensive, and misleading; that, in laying down strict rules for the quarantine of smallpox, sanitary authorities are favoring unscientific and illogical methods for its control and are conveying false ideas as to the safety of the public, the Minnesota State Board of Health advises that after Jan. 1, 1908, further attempts to control smallpox by means of quarantine shall be abandoned.

The reason for postponing action on this recommendation until Jan. 1, 1908, was that time might be given those who wished so to do to provide for their own and others' protection through vaccination.

On Aug. 6, 1907, said State Board of Health, following out the above recommendation, formulated the following regulations:

"The local health officer having knowledge of, or having reason to suspect, the existence of smallpox, shall investigate, and at once place upon the house where smallpox exists a sign setting forth the facts. This sign is to serve only as a warning to those who may wish to avoid the house, and not as an indication of quarantine. When the attending physician considers a smallpox patient as having recovered, he shall report the facts in writing to the local health officer, who shall thereupon remove the warning card from the house. The patient must not leave the house until after the removal of the warning card.

"The apartments occupied by a smallpox patient shall be deemed infected, and, when vacated by death, removal or recovery of the patient, shall together with their contents, be thoroughly disinfected under the supervision of the local health officer.

"Every physician shall immediately report to the local health officer, in writing, the name of every smallpox patient under his care, the state of his or her disease, and his or her place of residence. A report must be made for each case as it occurs in a family or household.

"Every physician shall report, in writing, to the local health officer the death of any smallpox patient under his care within twelve (12) hours thereafter.

"The local health officer of any city, village or township must report within twenty-four (24) hours to the secretary of the Minnesota State Board of Health all cases of smallpox occurring within his jurisdiction, and the date of removal of the warning card."

It so happened that Minnesota was in the midst of an epidemic of a mild type of smallpox when these new regulations went into effect—a most trying test, for if said new regulations were to prove inefficient the smallpox morbidity should at this time have increased and persisted.

A deluge of criticism was poured upon the State Board by those who had not studied the conditions. As a matter of fact, the full-fledged epidemic present before the new regulations went into effect, emphasized the inefficiency of the old quarantine regulations. It was not strange that such an outbreak should be continued into 1908, as it was.

The smallpox record in Minnesota for the last five months of 1907, and the first seven months of 1908, is as follows:

1907	Cases	1908	Cases
August	52	February	1224
September	51	March	1135
October	121	April	1093
November	313	May	909
December	662	June	407
January	936	July	233

From the above it will be noted that the number of cases of smallpox did increase during the first four months after the new regulations went into effect, but following this there was a decrease from month to month, as shown in the records of May, June and July. The fact that the morbidity rate diminished under the new regulations would seem to weaken the value placed upon the old quarantine regulations.

The Minneapolis and St. Paul health officials were not favorable to the new regulations. The city council of Duluth ordered the old rigid regulations of the State Board, in force before Jan. 1, 1908, to be continued. The record for these three cities during the period already referred to is as follows:

1907	Minneapolis	St. Paul	Duluth
August	No report	5	No report
September	No report	5	No report
October	No report	66	No report
November	68	110	19
December	82	65	34
1908			
January	106	65	96
February	97	45	39
March	94	61	105
April	117	34	114
May	38	32	80
June	20	83	84
July	No report	38	29

It would thus appear that these cities which were under the same regulations relative to the control of smallpox as those prior to Jan. 1, 1908, made no better showing in morbidity rates than did the state at large which was under the new regulations. It might seem as though the continued high rate of smallpox in these three cities after January 1st was due to imported infections from the country districts, but the records do not support this possibility. It would

seem, therefore, that these records indicate the impossibility of controlling smallpox *with quarantine*, even under careful sanitary supervision. As a matter of fact, Duluth permitted prisoners who had been transferred from the jail to the quarantine hospital to escape. Truly, if patients cannot be restrained in a quarantine hospital, how are they to be restrained in private residences?

The health commissioner of Chicago raised the question as to whether Minnesota should not be quarantined against after the new regulations relating to smallpox went into effect. He announced that Chicago did not want smallpox infection from Minnesota. This commissioner was thereupon asked to advise the Minnesota State Board of all smallpox infections reaching Chicago from Minnesota. This he promised to do and reported three such cases prior to Feb. 8, 1908, for that year. Of these three cases, one was from St. Paul, one from Duluth and one from the state at large. As both St. Paul and Duluth were under the same regulations at the time these two infections went to Chicago as prior to Jan. 1, 1908, the new regulations of the State Board could not be held responsible for these infections.

One of the Chicago sanitary officials stated in discussion at the American Medical Association meeting in Chicago in June, 1908, that Chicago was receiving smallpox infection from Minnesota, but Minnesota has received no notification of such infection beyond the three cases already referred to, nor do the Chicago records support the statement of this official, as shown below:

SOURCES OF SMALLPOX INFECTIONS IN
CHICAGO, JAN. 1 TO JULY 25, 1908.*

Cases		Cases	
Chicago	47	Texas	1
Illinois (outside Chi.)	12	Kansas	1
Wisconsin	1	Oklahoma	2
Minnesota	3	California	1
Michigan	1	Tennessee	1
Indiana	4	Washington	1
Iowa	2	Montana	1
Missouri	5		
Total	83		

Of the 36 infections from outside of the city of Chicago, one was from a district in Minnesota under the new regulations and 35 were from cities or states presumably still practicing rigid quarantine for smallpox. Chicago with its 47 infections is also supposed to be under rigid quarantine supervision. Apparently quarantine

neither prevents infection in Chicago nor the importation of smallpox from other sections.

It would seem that the stand taken by Minnesota relative to the control of smallpox has set other sanitary officials thinking. I am advised that one of the western Canadian provinces is considering the question of adopting regulations similar to those of Minnesota. North Dakota is now under such regulations, and another western state is about to consider action even more radical than that taken by Minnesota, for its State Board is to discuss at its next meeting the following:

WHEREAS, It has been thoroughly demonstrated that vaccination properly performed and repeated at proper intervals is an absolute preventive of smallpox; and,

WHEREAS, The care of cases of smallpox is a heavy expense on the counties of the state; and,

WHEREAS, Properly vaccinated persons are not subject to smallpox, and one thus vaccinated cannot become a care upon the county from smallpox, now therefore be it,

RESOLVED, By the State Board of Health ofthat on and after Jan. 1, 1909, there shall be no quarantine for smallpox in the State of.....but persons suffering from smallpox shall be allowed to go at large as are persons afflicted with a non-communicable disease.

The argument submitted in favor of these last resolutions is in part as follows:

"I believe there is not a health officer in the United States who is not fully convinced that vaccination will prevent smallpox, and that quarantine at best is only a partial preventive. The people who are opposed to vaccination depend upon quarantine to protect them.

"This quarantine must be maintained at the expense of all the people of the state, in order to protect the few. Is it right that where we have an absolute preventive, obtainable at a nominal cost, the entire people of the state should be put to a heavy expense in order to protect the few?"

In Minnesota many careful thinkers have expressed their approval of that state's new regulations.

After the protest from Chicago relative to imported cases of smallpox from Minnesota, the State Board of that state felt that it did not wish in any way to be party to the spread of smallpox into other states. It therefore passed the following regulations relative to the unvaccinated:

"Following an exposure to smallpox, every individual who cannot show evidence of a recent successful vaccination or a recent attack of smallpox must be vaccinated within three (3) days of the first exposure or placed under the same isolation restrictions as smallpox patients.

"If smallpox prevails in a community, or if the disease appears in a school, all unvaccinated teachers and pupils must be excluded from school for a period of

*Taken from the Chicago Weekly Bulletin.

three weeks unless vaccinated within three (3) days of first exposure. Failing to comply with this requirement, the school must be closed for a period of three weeks.

"If smallpox appears in any class in any college in Minnesota, all unvaccinated teachers and students in the class must be excluded from recitations for a period of three weeks unless vaccinated within three (3) days of first exposure. Failing to comply with this re-

quirement, the classes attended by such teachers or students must be discontinued for a period of three weeks."

On deliberate consideration of conditions the Minnesota State Board of Health feels that it has made no mistake in its new regulations, unless it is that they are not sufficiently radical.

A COURSE OF INSTRUCTION FOR SANITARIANS AND SANITARY INSPECTORS*

By F. F. WESBROOK, M. D., C. M.

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MINNEAPOLIS

Apathy concerning public health problems is due to various causes, amongst which may be given:

1. A primary lack of definite information concerning causes of disease and the proven inefficiency of a single blanket method of prevention for all. There has been a resulting development of the "Kismet," or "hand-of-Providence," attitude.

2. With the advance in specific knowledge concerning each disease, causes are seen to be operative within such hitherto undreamed-of limits, that light is thrown on our former failure in the attempted use of a blanket method. We are confronted with the necessity of a huge mechanism consisting of almost innumerable and oft-times complicated parts, each of which must be capable of accomplishing its own part of the work and yet be at all times in harmony with the rest of the machine. To illustrate: Compare the protective measures necessary in smallpox, diphtheria, plague, yellow fever, typhoid fever, tuberculosis, and other diseases, each of which calls for a special schedule of protective methods.

3. The medical profession has been to blame because it has not attempted to teach the public at least the general truths which underlie the cause, prevention, and cure of disease. It has excused itself on the ground that the public, like the individual patient, usually does not want to know the truth nor to assume responsibility.

4. The public has been at fault in presuming that it could not understand health problems, has not wanted to know the truth, has not provided for the education in matters of health for coming generations, has not kept its health affairs

out of politics, has not provided sufficient financial support for its public health machinery, and has not and cannot expect competent men to train themselves thoroughly for temporary posts which do not provide in themselves a livelihood and the work of which is so different from medical practice as to jeopardize the medical future of the man who undertakes it.

The public is even yet suspicious of recommendations made by medical men for its own protection, and which, if logically carried out, would largely do away with the practice of medicine of to-day and substitute for it an army of municipal, state, and federal public hygienists.

5. The total responsibility of public health protection has been too long thrust upon medical men who have often weakly assumed it without any corresponding authority, or the possession of special knowledge or proper mechanism for meeting the responsibility.

THE REMEDY

The remedy for this apathy of the public is education, and yet more education, both of the public and of the medical profession. This must be extended in every direction.

The average individual seems willing, or, if not willing, can be made to pay and pay well for a cure when he is sick. Communities pay the cost of epidemics and will even pay for engineering services in relation to public utilities, such as water supply and sewage disposal, but this is usually done under the stimulus of some recent disaster. They, like the individual, want a *cure*, not a *protection*. Clinical experts, life insurance examiners, and consulting and commercial engineers are all sure of a good livelihood because they can help the individual or community out of difficulties, while sanitarians and municipal en-

*Read at the Minnesota Sanitary Conference, St. Paul, October 6, 1908.

gineers are usually left to semi-starvation because their function is to avoid those same difficulties, without, however, having either available public sentiment or funds to enable them to do it.

Mathematical experts are well paid by business and insurance companies, but the expert vital statistician is regarded as a harmless freak, who is well repaid by his *own* efforts. The cause is that private business is always more wisely and efficiently conducted than public business on account of the greater personal interest and attention given and because also it is human nature to risk the necessity of having to spend lives and money in order to get out of a difficult situation rather than spend a small fraction of the amount in avoiding the situation. Furthermore, although hitherto the magnitude of the problems has been realized in a general way, the sanitarian has been usually a medical man and by the public has been thought incapable of expressing public health losses and gains in terms of dollars and cents. The public has looked upon his statistics and recommendations as unreliable.

Fortunately, a new line of expert work has developed, and economists and sociologists find in public health a most fertile field, and public hygienists are beginning also to study social economics. When each sees clearly and thoroughly understands the other's field the team will be able to do double work, and results will then come rapidly, because statesmen and politicians will be able to grasp the magnitude of the asset which is constituted by the public health.

The work of the Economic Section of the American Association for the Advancement of Science has been far reaching, and the creation of the Committee of One Hundred most timely. Such a combination of social elements appeals to the general public far more forcefully than can the unsupported and on health matters often greatly divided medical profession. The profession is not always wise in its proposals for the betterment of public health, since, from dealing with the individual and his cure rather than with the mass and its protection, the experience is often ill calculated to serve as a basis for formulating ways and means of dealing with masses on an economic and sociological basis. The economists, on the other hand, must learn much of medical truths, of the relation of physician to patient and of physicians to each other, in order to render to humanity the necessary service and to avoid disappointment for individual and public.

Fisher, Norton, Devine, and that large group

of social, charity, and economic workers who have had to study the economic phases of disease, make progress much easier. The magazines, newspapers, and various publications are doing much in the general campaign concerning the elimination of preventable losses, although the lack of fine discrimination, without which we cannot hope for complete success, is often apparent. The recent publication by Dittman, in the *Columbia University Quarterly* for June, 1908, is of especial value.

Many universities and boards of health and other American institutions have offered more or less full and satisfactory courses of instruction in public health but have failed thus far to attract students because of the lack of a market for such wares after they have been stocked. It is not enough to provide such instruction. The people in general must be instructed, in order that they may demand, and be willing to pay for, the services of expert public hygienists, who will then save them many times over the cost involved. When such demand is created, the supply, both of available men and of adequate courses of instruction, will not be wanting.

With these facts before us there is no need of explanation or apology for having departed so widely from the title of this paper.

A sketchy outline is herewith submitted as possibly of use in our discussion:

*I. General and Widespread Education Calls for**

(a) Use of newspapers, magazines, etc., where fundamental hygienic truths can be published from authentic sources. It may be necessary in order to furnish the essential "news" feature to use names and photographs. Controversial points, extreme positions, and fads must be avoided.

(b) Popular lectures by lay and medical lecturers who use lantern slides, exhibits, and other popular aids will be useful. An extension of the present tuberculosis campaign, traveling exhibit and lecture method now in general use, has been suggested by Dr. H. M. Bracken for Minnesota.

II. Teaching in Grade Schools means the substitution of real hygienic truths for the false and misleading instruction now given in many localities under the guise of physiology and hygiene. It calls for the preparation of suitable books, pamphlets, or tracts by sanitary authorities. In one state at least this has been done by

*Since this was written, two pamphlets have been received from the New York City Board of Health, one of them providing instruction for school children and the other being for patients suffering with tuberculosis, which are to be distributed by physicians, school teachers, and others who may come in contact with such cases.

the State Board of Health. The work planned by Dr. Stiles for the United States Public Health and Marine Hospital Service in co-operation with state and local boards of health and education in relation to hook-worm disease should be extended to other localities and to other health problems.

Books and proper teaching of the school teachers are necessary. Here normal schools and university extension teaching must be developed.

III. Teaching in High Schools and Colleges.—All freshmen in all high schools and again in all colleges and universities should be taught *compulsory* courses for which credit should be obtained in order to progress further in the work. More detail should be provided as advance is made from school to high school and from high school to college.

IV. University Teaching should also include the teaching of public and personal hygiene. In New York a most excellent arrangement has been made between the State Department of Health and Cornell University. Some such course should later be made compulsory for *all* students in their freshmen year. In Minnesota the State Board of Health has had under consideration for a number of years the giving of proper instruction to sanitarians and has had under advisement for a long time the recommendation of some such plan as the following to the Regents of the State University:

1. For all university students in the freshman year a series of public lectures should be given in untechnical language by various university departments and those in allied lines, such as state and city health officers and the charity organizations. These should be compulsory and the students should be passed or failed in them. They should include, amongst other things,—

(a) The general principles underlying the spread of disease and means of combatting the infectious diseases. Here should be given popular though scientifically correct information concerning microorganisms, the role of mosquitoes, the action of germicides, the preparation and use of antitoxin, etc.

(b) The hygiene of school life and the importance of medical inspection. This could be shown to be important to all citizens.

(c) The prevalence of eye defects and the occurrence of nose and throat troubles and other concealed infirmities which interfere with satisfactory development of the scholar should be discussed and the means of detection and remedy pointed out.

(d) Hygiene of food and clothing should have at least a few lectures.

(e) Ventilation and the sanitation of private and public buildings should receive attention.

(f) The laws which relate to the prevention of disease, including an outline of the working of federal, state, and local machinery for protecting public health should be taught so that each might realize and perform his private and public duty; vital statistics, or the book-keeping side of public health problems should be emphasized.

(g) Preventable diseases as the cause of poverty; social and economic phases of the question should be considered.

2. Special instruction to students of the College of Education should be afforded along the same lines, only more advanced.

3. Special instruction for medical students.—The present courses in chemistry, physiology, bacteriology, and pathology are necessary groundwork, and when completed, should be followed by special instruction in public health. The College of Medicine and Surgery has planned for this year to give in its courses on preventive medicine and hygiene, additional opportunities for the students of medicine to examine closely public water supplies, sewage disposal systems, including purification plants, garbage disposal, slaughter houses, abattoirs, dairies, and establishments which distribute milk, the practical management of smallpox, diphtheria and other communicable diseases, etc. Instruction in regard to the reporting of communicable diseases and their management, the reports of births and deaths, collection of vital statistics, etc., will be carried forward and practical courses given by the Engineering College of the University on matters pertaining to water supply, sewage and waste disposal, ventilation, and structural or building sanitation. It is hoped that a special lecture or series of lectures may be arranged which will be given by the Department of Economics or through one of the charity organizations of the Twin Cities.

4. Special instruction on sanitation for sanitary engineers.—This includes practical, laboratory, and field work and lectures on the various engineering phases connected with the cost of construction and selection of sites of operation, etc. In addition to this, the students take at the present time, the course in general bacteriology given to the medical students which includes a study of the bacteria with necessary technic for methods of staining, growing, isolating, and

differentiating, etc. It further includes various tests of germicidal activity and practical work as related to water examinations and analyses necessary in the control of water supplies, sewage disposal plants, etc. Similar work in chemistry is also provided.

5. A special course in public health law would seem indicated for the College of Law, as most legal men are not inclined to give this special study.

6. Instruction in sanitation leading to granting special diplomas for professional sanitarians,—

(a) For medical health officers.

(1) As a prerequisite for entrance on this study, the possession of a medical degree for at least one year should be insisted upon, together with the presentation of the equivalent of the undergraduate courses given in the University of Minnesota in chemistry, bacteriology, and pathology, public health, including executive, laboratory, engineering, and economic phases.

(2) Where this latter cannot be presented, graduate students should be compelled to take the undergraduate courses in which they are deficient.

(3) In addition to this work, at least three months should be equally divided between the chemical and hygienic laboratories of the university in learning something of the practical laboratory work necessary to undertake chemical examinations of water, food products, food adulterations, etc., and the bacteriological examination of water, sewage, food products, the laboratory diagnosis of diphtheria, the technic of such methods as the Widal reaction, examination of sputum, and other materials for the bacillus tuberculosis, rabies diagnosis, tests of various methods of disinfection, examination of milk supplies, etc., should be included.

(4) Special instruction should be given by the Secretary of the State Board of Health on the legal phases of public health as administered in Minnesota and in other states and the federal authority in matters of public health. Vital statistics should be covered, and the executive procedure and methods of managing the different preventable diseases, meat inspection, dealing with nuisances, the sanitation of travel, hotel and restaurant inspection, etc.

(5) Engineering phases of public health might well be taught by the University Engineering Department, to include a much more elaborate course than that at present given to the undergraduates in Medicine and with a practical demonstration of plants and processes in

actual operation or in process of construction.

(6) The economic and social phases of public health work might well form the basis of a short course to be given by the Department of Economics.

(7) A series of inspections with some of the employees or representatives of the State Board of Health in various operations throughout the state should be included.

(8) A course of not less than three to six months where the graduate student devotes his whole time or a specified portion of it to acting as assistant to the commissioner of health or health officer of one of the larger cities. His work should be certified by the officer. He should pass an examination upon this work at the hands of the University, or the State Board of Health, or both, before receiving his diploma.

(9) A special service of several weeks or months in the infectious departments of the city hospitals of the Twin Cities, under the city physician and attending physicians, requiring daily visits of the students should be demanded. In addition, special work in the quarantine hospitals of the two cities should also be demanded,—

(b) For engineers who are about to take up sanitary work with the expectation of holding public appointments as city engineers.

In addition to their other graduate work, they should receive full engineering instruction and should also receive some instruction on the legal and laboratory phases of public health, before being eligible to receive a diploma from the University for presentation to the State Board of Health. This should differ from the diploma of public health for medical health officers.

(c) For health inspectors, meat inspectors, etc.—Special courses must be arranged which might require the co-operation of the State College of Agriculture and the United States Bureau of Animal Industry for its completion, especially in regard to meat inspection.

In looking forward to the requirement of state diplomas for those who are engaged in sanitary work, it is likely that the Minnesota State Board of Health should require a special examination in addition to the diploma, for practical work demanding a personal knowledge of the health officer's duties. Exceptions must be made by the Board in the granting of licenses, so as to give them to those who have had previous experience in health work, which is the only way a sanitary education could be obtained in the past.

In pointing out the present difficulties in securing special training for sanitarians so that

future generations may be protected by sanitarians who have been trained before they assume their positions rather than by a training gained, as we have gotten ours, at the expense of the public, the outlook does not seem hopeless. The mere formulation of courses of instruction by universities and boards of health will have

in itself an educational effect. Medical men and others trained in public health and public utilities must, however, give and give freely at all times of their experience to the public. Medical ethics in this particular must be re-stated and brought up to date.

THE PRESENT STATUS OF SMALLPOX IN MINNESOTA*

By G. W. McINTYRE, M. D.

Health Officer of Nicollet County

ST. PETER, MINN.

During the early part of the year 1899 smallpox made its appearance in Minnesota. It had previously prevailed for a considerable time in many of the southern and some of the western states. There appears to be evidence to indicate that it was originally brought to this country from Cuba. Since its appearance in Minnesota it has gradually spread until a considerable portion of the state has been affected. Probably at no time, since its first appearance, has the state been wholly free from the disease, or, at least, from sources of infection. Not only the cities, but many rural districts, have been overrun by it. From July 13th to August 24th of the present year, it was reported as prevailing in forty-three counties.

From the beginning of the epidemic to January 1st, 1908, there had been reported 32,549 cases with 224 deaths. It is a well-known fact, however, that all cases were not reported. Dr. H. M. Bracken, in a recently published article, estimated the whole number of cases, including those not reported, as 50,000. Such estimate was undoubtedly very conservative.

As in all epidemics of contagious diseases, the progress of smallpox has been very irregular. The number of cases reported from month to month has been subject to wide variations, the sudden and remarkable increase at times undoubtedly being due to new or undiscovered sources of infection. In addition to such accidental variations there has been an annual rise and fall in the number of cases. The increase beginning in October or November and continuing until the following spring, from which time the number has again decreased until the following fall. These variations may be accounted for on climatic conditions and the resulting

changes in the habits of the people. During the cold season people are more frequently assembled in warm, close rooms, many of them probably wearing heavier clothing still infected from the previous winter.

If you examine the statistics of the Department of Health relating to smallpox, you will observe that from the first appearance of the disease in Minnesota there was a rapid increase in the number of cases each year until 1902. From that time until 1906 the number gradually decreased, touching the low mark of only one case in October. Since then there has been another and even more rapid increase than the first, which should, perhaps, be regarded as a new epidemic. What the future course will be is a problem, the solution of which will depend very largely upon the personal conduct of such citizens as are not protected by recent, successful vaccination.

Beginning with the discovery of the first case in St. Paul in 1899, and continuing to the first of January of the present year, the state and local boards of health made strenuous efforts to control the spread of the disease, but without avail. One outbreak was scarcely gotten under control before others made their appearance, often in widely separated regions. Large expenses were necessarily incurred by state and local authorities. Law-abiding citizens who were honest enough to report cases in their homes were quarantined for long periods of time. Local commerce and trade were seriously interfered with, yet no apparent benefit resulted from the restrictive measures employed.

Having grown disgusted after nine years of failure with the futility and inadequateness of the only means for its control available to them, namely, quarantine, the members of the Board of Health adopted a new scheme, which went

*Read at the Minnesota Sanitary Conference, St. Paul, October 6, 1908.

into effect on January 1, 1908. If not more effective, it will, at least, possess the merit of being somewhat less expensive. The old methods of quarantining smallpox were practically abandoned, and people were advised to vaccinate themselves, experience having repeatedly demonstrated that general vaccination is the only effective method of controlling the spread of the disease.

It is too early as yet to pass judgment on the wisdom or unwisdom of the new order, though present conditions seem to indicate that no serious results have followed. The general impression prevailed that there would be a considerable increase in the number of cases after the change, and such appears to have been the case. It does not necessarily follow, however, that the increase in the number of cases so far this year, over the same period of last year, is occasioned by less effective measures of control, for local boards are quite generally employing the same methods formerly used; and, as previously stated, the present increase in the prevalence of the disease dates from October, 1907. The result might, and quite likely would, have been the same under the old regime.

It may be of interest to consider for a moment the conditions which have made it possible for the disease to exist so long; and which have been responsible for its wide dissemination notwithstanding all efforts put forth to prevent its spread. Previous to the year 1899 there had been so little smallpox in the state that its citizens were unfamiliar with its appearance or tendencies. Furthermore, they felt so secure in the absence of the disease, that vaccination had been neglected, even among those who were firm believers in its efficacy. Later on, many had their children vaccinated, but neglected the precaution in their own cases, on account of the inconvenience of sore arms.

Few physicians, even, at the commencement of the epidemic, were familiar with the manifestations of smallpox, and the mild form then prevailing conformed so poorly with the classical descriptions given in works on practice that they failed to recognize its real nature—consequently it was neither quarantined nor reported until many had become exposed. Again, owing to the fact that physicians disagreed, to some extent in the beginning, regarding the nature of the malady, and to the slight indisposition it occasioned in many cases, people grew to have no fear of the disease, and therefore, it was quite as often concealed as reported. Such homes, where the dis-

ease was concealed, not usually being scrubbed and fumigated after the patients had recovered, remained as constant sources of infection.

People were constantly advised to protect themselves by vaccination, and many did so, though others, too numerous to mention, were undoubtedly dissuaded by the exaggerated statements regarding the dangers of the operation published by so-called anti-vaccinationists. Wherever smallpox was known to exist, there editors were furnished with an inexhaustible supply of such copy, which was only too frequently published. Physicians, on the contrary, wisely or otherwise, seldom wrote for the papers. As a large percentage of the population is wholly dependent upon newspapers for its knowledge of current events, it follows that it was supplied with distorted and unreliable statements, which, not being contradicted, were accepted as truths. Does it not seem reasonable to suppose that such erroneous conceptions could be largely prevented or corrected if health officers would make more liberal use of the newspapers in regions where smallpox is known to prevail? Among other factors which contributed very largely to the spread of the disease, perhaps none were more potent than the inherent love of the American people for travel and social intercourse, and the ever ready facilities for the gratification of both.

Notwithstanding the fact that the mortality-rate has been exceptionally low, it is important to stamp out the disease as quickly as possible. The truthfulness of this proposition will probably be conceded by all. Should there be those, however, who think otherwise, they should be reminded that twenty-five people have died annually from the disease since it invaded the state. Many others who have survived attacks, have probably suffered more or less permanent impairment of health in consequence. Aside from all personal loss to the individuals affected by the disease, there has been a financial loss to the community in each infected district, which is worthy of more careful consideration than it ordinarily receives. Such loss results from interference with the ordinary business affairs of the community, occasioned by the disease, and does not include the expense incurred by boards of health in efforts to prevent its spread.

It has been impossible to ascertain accurately what the expense to the state and the various counties, has been, although it must necessarily have been large. In caring for individual cases, in which the state was responsible, the cost has varied from \$45 to \$698. From February 21,

1899 to Sept. 12, 1908, it cost the city of St. Paul about \$85,000; and the maintenance of the quarantine hospital in Minneapolis for 1907 cost \$7,453.04. It also cost the city for vaccine virus last year \$279.10. Dr. A. R. Reynolds, of Chicago, says it cost the city of Chicago for the care of patients for eight years the sum of \$321,157.33. Dr. Baker, of Michigan, published a paper showing that his state spent in 1903 about \$143,000 in attempting to restrict smallpox. Minnesota is probably not much behind Michigan in the matter of expense incurred by the disease, and yet it is all preventable and unnecessary; simply a concession to the ignorance or prejudice of a small element of the population. It seems hardly fair or just to tax the state to quarantine those who refuse or neglect to protect themselves against the disease when it can be done with so little inconvenience or expense to them; yet very many people go even farther, and expect the various counties or municipalities in which they chance to reside to bear the whole expense of their illness in case they contract the disease. Assuming that it is desirable to get rid of the disease as quickly as possible, the question arises, How can the desired result be best accomplished? Under present conditions there can be but one answer: *by general vaccination*. If all citizens of the state could be induced or compelled to be vaccinated, the disease would quickly disappear without recourse to other

measures. In proof of that assertion, the fact may be mentioned that more than ninety per cent of those who have suffered from the disease have never been vaccinated. Of the vaccinated who contracted it, the vast majority were adults who had been vaccinated in childhood. It was very exceptional to find any person sick with smallpox who had been successfully vaccinated within twenty-five years.

Unfortunately, the epidemic has been remarkably mild—unfortunately, both with regard to the loss of life and from a purely mercenary standpoint. Had all cases been dangerously severe none would have been concealed, and the disease would have been quickly stamped out, few lives would have been lost, and an enormous expense to the state would have been avoided.

Whether or not smallpox increases under the new order of things, there appears to be no alternative than to let it run until the people tire of it; then, having the remedy in their own hands, they can make vaccination compulsory and thereby put an end to it. Even the prevalence of the disease has one redeeming feature in that it is constantly protecting its victims against future attacks, possibly of a more malignant type. In fact, I am not certain but that we should regard this exceptionally mild epidemic of smallpox as a divine dispensation intended to protect the anti-vaccinationists against the errors of their own judgment.

TUBERCULOSIS AND POVERTY*

By EUGENE T. LIES

General Secretary of the Association Charities, Minneapolis.

MINNEAPOLIS

During the last thirty years the advances in the handling of the problem of poverty have been many and important. Indeed, it is only in that period that we have even become conscious of the fact that there was such a thing as a problem of poverty. It was quite universally thought that a poor man was simply a man without money and therefore, if he were given money, albeit a dime or a quarter, he would no longer be poor. It was also believed that if you could but get hold of every poor man in existence and treat him in the same way, you could, after having tickled the palm of the last mother's son of them, pat yourself on the back

and exclaim, "Lo! now does poverty afflict the earth no more."

But we of this day and generation are wiser. We realize first that a man is a composite of several selves, physical, mental, moral and spiritual, each of them in its turn the product of many and varied influences. He is a mixture of heredity and the long train of elements that have made up what broadly may be termed his environment. So in dealing with the man who is poor,—if we are to get anywhere, we must needs consider him more than a mere stomach to be filled or a back to be covered; not necessarily a moral delinquent whose wrong-doing has made him poor and whose cure therefore is a religious tract, as was the old idea. No, the

*Read before the American Public Health Association, August 28, 1908.

task of the charity worker today is an infinitely more difficult one. He must analyze, he must synthesize, he must get "the story." He must consider the man in his relation to himself, to his family, to his neighbors and his neighborhood, to his church, to the industrial situation surrounding him, to the general life of the community. This method it is that is leading to the establishment of certain convictions as to what the problem of poverty in our modern times really is. And no other method could have established these convictions.

Well, what are they? The first important one is that, since men, complex beings, have brought into existence a problem of poverty, so the problem itself is a complexity and must be considered in a broad way if we are even to approach a solution of it. The second is that, unless society, particularly the social worker and the legislator and the church, pay at least as much attention to the bettering of industrial and social conditions as they ordinarily do to personal wrong-doing, they will no more solve the problem of poverty than they can sweep back the ocean with a broom. Third, among the causes of individual poverty, none ranks higher than disease and accident. Fourth, among the diseases, the great stalking captain of misery and death is tuberculosis.

Therefore, would we do anything to throttle poverty we must try to throttle tuberculosis. In the words of another: "This is the arch-enemy of mankind, bringing in its wake more tears, more broken and desolated families, more widows and orphans than war or pestilence or all the calamities of nature and commerce." It kills every year about 300 Minneapolis citizens; 2,000 persons in the state of Minnesota; over 150,000 in the nation; two million in the world. All unnecessarily, let us remember that! More people die in the United States from tuberculosis each year than were killed on both sides in the battles of Gettysburg and Waterloo together, or in the whole Russo-Japanese war. It is altogether probable, according to the researches of experts in different parts of the world, that the great majority of these deaths were those of poor people.

Every one of them formed a possible center of infection for all who came near, and therefore was a potential creator of additional misery and poverty in the world, the degree of danger depending, of course, upon the degree of skill with which the patient was handled. In every

instance there was a long drawn-out period of illness, together with the inevitable gradual decline in earning ability, and the expenditure of great sums of money for medical service and medicines and, in the case of the workingman, the early exhaustion of his own savings and a drawing upon the savings of his relatives and friends.

With the decrease in the workingman's income comes the deprivation of the necessities of life for the other members of his family, and with that comes their own lessened power of resistance to the germs emitted by the afflicted one. There usually follows also removal from good living quarters to less desirable and finally to unsanitary, dark and small rooms, and these probably in a tenement inhabited by many other families.

If it is the father of the family who dies, the wife possibly has to take employment in order to care for the children, or some of the children who, if the father were living would have deferred the beginning of their working career to get more education, must go out as wage earners. In either case the normal family life is disrupted and possibilities for ill consequences are brought into being. Oftentimes the family is forced permanently upon charity when the children are all too young to work and the mother is needed for their care. Unless the afflicted men are union members, outside charitable aid is in 75% of the cases needed even during their illness.

If it is the mother who dies, the children, of course, lose from their lives the influences which in most instances would have aided them to self-supporting, useful careers and without which the possibilities to the contrary are only too rich, as juvenile court and reform institution records show. If the mother is a widow the situation is so much worse and the children possibly become public dependents.

True, death from any cause of father and mother in poor families as a rule brings these same consequences, but I am trying to point out that tuberculosis is one great if not the greatest causative factor in the creation of these woeful conditions. Even during the years of illness of father and mother, the home becomes a sad place for the children and they receive less than the full care necessary to rear them properly.

Moreover, in the homes of the poor, these children are in constant danger of infection. Indeed, there are many instances on record of the extermination of whole families and in such, life

for years becomes a long, wearisome, dragged-out process of money loss, sorrow and terrible woe.

Consider two cases only:—A skilled cabinet maker fell a victim of the dread disease. His faithful wife who nursed him, after two years was also buried from the same cause. As a result four of the six children had to go to work early, thus cutting them off from possible lofty careers and fine service, for one was destined to become a clergyman, another a teacher, another an engineer, another an art decorator and all had already started on their courses of preparation which were now cut short. They had to resort to work that brought returns for bread. Well the years have gone on and the prospective clergyman, teacher and art decorator are no more; the prospective engineer has for six years come down from one grade of work to the next lower until now he is wholly incapacitated and dependent upon friends. Another daughter is in the insane asylum from brooding over all the trouble and possibly partly as a result of the neurological effect of the disease. The sixth child, a daughter who has had the good fortune to travel with friends and so of disassociation from the germ-laden home has thus far escaped the disease. The family originally had a business and residence property and a goodly bank account, all of which have been wiped out by this ruthless scourge.

Listen to just one other tale out of the long list that might be told. Three years ago a man and a maid married, happy and hopeful and certain that the world was a good place to live in. After several months the husband fell ill, was examined and found tubercular. From a mechanic's position he came down from one grade of employment to the next lower that his physical condition permitted him to do. Intermittent work took the place of regular everyday toil and finally came total disablement. In the meantime the wife took up work to keep things going. Friends and the charities aided from time to time. Soon the wife had spells of exhaustion which caused her friends to raise their brows. A baby came. Our nurses were called in at this point. Both man and wife were examined by specialists for possible admission to the new State Sanatorium at Walker for incipients, which was almost ready for opening. His was a case just on the borderline between curable and hopeless, but could be admitted. Hers was one of incipency. The necessary papers were made out, the County Board had agreed to pay the cost of care and

transportation. Then we waited for the word to come on. This was early last fall. From week to week the news came that next week surely the institution would be open. At one time when it seemed that the report was really true, we packed the family's few effects, placed the child in an institution pending the parents return and almost had bought the railroad ticket, when again the word came: "Sorry, but the Sanitarium isn't quite ready yet." And so things went along until, when the place finally opened in December, the couple, on being examined again, were both found to have gone over into the incurable stage and therefore were not admissible. The best that could be done has been done for them at home since then. In January the baby died of consumption and the man and wife are certainly doomed. The last element in this tragedy is that there is another babe on the way, soon to be ushered into this vale of tears.

Probably the worst fact of all in this connection is that the strong hopes of the consumptive for recovery during the long period of his affliction make him a ready victim of the quack and the patent medicine man who take his money ruthlessly and guarantee to cure. All the while the disease is getting a tighter and tighter grip upon him. When his exchequer is empty, the quack casts him off and the charities get him,—to bury presently. O, that we might discuss here the dark and devious ways of these vipers, the advertising quacks who prey upon the poor and the unthinking, but this is not the time. Suffice it to say that we know of one instance where one of these scoundrels offered to give a man in an advanced stage of consumption a written guarantee to cure upon payment of \$50. The offer was not accepted and nine hours later the man died in the city hospital. No, we are not living in the dark ages!

Of 67 female tuberculosis cases handled by the nurses of the Minneapolis Associated Charities in 1907, 56, or 83.5%, were housewives, mothers of 160 children. Some of these children have since January 1st become half-orphans or orphans, and because nearly all of the cases that come to the nurses are of the advanced, incurable type, Minneapolis will in the end have 160 motherless children as a result of these 67 cases.

If it is true as the statisticians have figured out that the 150,000 deaths in the United States from tuberculosis entail an annual loss of \$330,000,000 then our 300 deaths in Minneapolis mean an annual loss of \$660,000 and the 2,000 deaths in

Minnesota, \$4,400,000. Can we afford it?

Probably one of the greatest needs of the hour in the fight against this foe is the acquirement on the part of the general medical practitioner, especially the practitioner among the poor, of real ability to diagnose tuberculosis in its earliest stages, and so make it possible for him to take a more vital part in preventive effort.

We have considered, meagerly enough it is true, tuberculosis as a cause of poverty. Let us now consider poverty as a cause of tuberculosis. All authorities agree that this disease is pre-eminently the affliction of the poor rather than of the rich. And the reasons are not far to seek.

Of the conditions necessary for tubercular development are a proper soil and the seed; the proper soil being a weakened constitution, the seed being the tubercle bacilli. Anything that weakens the constitution may be called an indirect causative factor in tuberculosis.

The poor live poorly. They do not have proper or sufficient food. They live in small, often dark and unsanitary rooms, and in tenement buildings that may be crowded. Their income is too small to do better. As a rule ignorance and carelessness go with poverty and therefore we find that the food that is used is improperly cooked, that dirt abounds, that fresh air is tabooed; that children are woefully neglected and badly fed. The mother in the poor family is usually overworked and breaks down in general health. She has too many children and that fact in itself intensifies the existing want. All these conditions are direct aids in making candidates for tuberculosis. Add together poverty, ignorance and tuberculosis and you have a bad mess which any community, out of consideration for its own safety, dare not ignore for long.

Consider that the average workingman has not the say as to conditions in the shop in which he works; that he must accept unsanitary conditions, dust, darkness, improper toilet facilities, etc., and you see that he may run right into hotbeds of tuberculosis. If there is a union in his trade, probably it will bring about better conditions. But not all unions even, are alive to the needs of their shops along this very line. They require instruction as do the employers.

The man, who for lack of money must live in lodging houses, is in very great danger from the white plague by reason of the insanitary conditions in these places. They are veritable breeding holes for disease of all kinds, especially venereal and tubercular. It is said that sixty thou-

sand men go through the Minneapolis lodging-houses annually and not an inspector from the city or state health departments ever gets inside, except in some emergency like small-pox. In some of the houses the bed linen is changed only when it is black. In many, there are piles of filth under beds and in corners. In many semi-darkness prevails in the sleeping quarters, the sun never reaching some portions at all. Here certainly are conditions that should not exist. On the whole, these lodging houses harbor honest, foreign working-men whose earnings are too small to buy them better living quarters. They build our railroads, harvest our crops, and cut our timber. Are we going to show our appreciation of their service in our social economy by dealing out to them disease and death? In Chicago in five years from 160 lodging houses—679 hopeless and destitute cases of tuberculosis were sent to the free tuberculosis hospital at the poor farm. Others doubtless went to no hospital or left town, so that this total does not represent all cases that were in these lodging houses during that time.

As to the relation between the amount of earnings and tuberculosis, studies have been made in various countries. For example, in Hamburg, Germany, it has been found to be generally true for a number of years that the number of deaths from tuberculosis varies inversely as the income. The same has been found true in Vienna where in 1902 in District No. 1, the best in the city, the death rate from tuberculosis was 11 per 10,000 of the population, and the income tax payers numbered 25% of the population; whereas in District No. 10, the worst part of town, the death rate was no less than 67 per 10,000 and the income tax payers 9.2% of the population. In 1907 our Associated Charities nurses had 52 male tuberculosis cases, of which an even 50% were common laborers, the poorest paid class of workers.

Moreover, statistics the world over show that this enemy strikes down its victims in fiendish style just at the period when they should be most useful to their families and to society and when they should be enjoying the fullest vigor of manhood and womanhood. This period is from 20 to 45 years. Out of 137 patients handled by our nurses last year 86 or 62.7% were of these ages. (In a whisper let it be said that 18 were little children below 10 years of age—two of them babes.)

What we need in this country is an adaptation of the German system of industrial insurance

which would have the effect, as it has in Germany, of encouraging a man to undertake treatment for tuberculosis early when he is still in a curable stage, instead of waiting, because of the expense involved, until he goes over the incurable line. In a special report of the English Local Government Board for 1905-06 are given the results of a careful investigation of poverty and tuberculosis in the United Kingdom with special reference to their relation to one another. The conclusions are startlingly interesting and certainly of the very highest importance.

"It was shown that the mortality from consumption had declined from 3.99 per thousand living in 1838 to 2.77 per thousand in 1855 and to 1.15 per thousand in 1906, an actual decrease in deaths from 59,025 to 39,746 in sixty-eight years. A second series of figures indicated that during fifty years the ratio of paupers per 1,000 in England and Wales had dropped from 48 to 25, while the death rate from consumption had declined from 27 to 10 in the 10,000. Comparisons were given also for Scotland and Ireland. In Scotland the ratio of paupers had fallen from 23 to 13 and of deaths by consumption from 40 to 22. In Ireland, where the ratio of paupers has risen in forty years from 11 to 23, the death rate from consumption has increased from 17 to 20.

"These figures do not establish a direct connection between poverty and the disease, but they are highly suggestive, and they permit of some generalizations that are instructive to all civilized countries. As regards Great Britain, it is evident that the statistics can be explained by immensely improved social and industrial conditions. The era that has brought about sanitation, better housing, a reduction in the hours of labor and an increase in the rewards of labor has saved life and diffused comfort and prosperity at the same time. If the value of the change could be estimated in terms of money it would be found that there was an immense gain to the people as a whole from expenditures and concessions that were considered ruinous by many mistaken opponents of progress. The nation has been lifted up except in Ireland, and the exception is something for English statesmen to ponder over." (Editorial in Chicago Record-Herald, Feb. 23, 1908. The writer of this article has verified the above figures by the Report itself.)

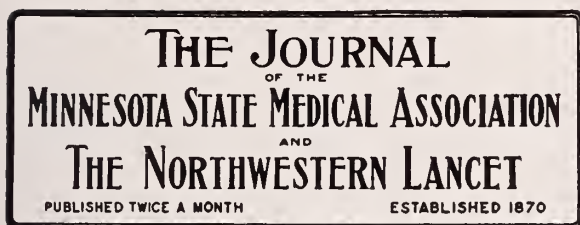
Proper living conditions and proper working conditions aid in the elimination and prevention of poverty. Proper living conditions and proper working conditions aid in the elimination and

prevention of tuberculosis. Both poverty and tuberculosis are dependent for development pretty largely upon similar causative factors and each may be either the cause or the effect of the other. We must fight both at the same time. While at all times it is absolutely necessary both in the treatment and prevention of poverty and of tuberculosis to lay great stress upon personal factors, hygienic, moral, educational and disciplinary, and this on the double ground of humanity and general welfare, yet authorities the world over agree that both are, to a considerable extent, social diseases and both call for social remedies.

"Everything that can be done to make men healthier and happier is germane to this purpose of preventing tuberculosis. The improvement of the housing of the working classes and of the sanitary conditions of theaters and churches, as well as of factories and shops; the multiplication of parks and play-grounds, gymnasiums, and baths; the widening of streets; the enforcement of a standard of healthful conditions in all occupations; the reduction of the working-day; the raising of wages; the education of the women and girls of the tenements in the art of housekeeping and the science of food preparation; the crusade against the noxious features of the saloon; scientific instruction about the effects of alcohol in the public schools, all these and kindred efforts tend, less indirectly than might be thought, to reduce the death rate from tuberculosis." (From N. Y. Hand Book on Tuberculosis.)

Society to-day, unlike the people of old, simply dare not look upon this frightful slaughter from tuberculosis as the will of God. It would be utter blasphemy. We cannot fold our hands in dumb resignation. We cannot escape individual and collective responsibility. But the fight is on, the battle is waging the world over. The question for each of us to ask himself is: "Am I on the firing line?"

Cyrus L. Strong, of New York, has treated seventeen cases of typhoid on a milk-free diet, and considers that his results justify its adoption. A milk-free diet eliminates one of the principal sources of danger, fermentation of undigested foods. He has used broths, crackers and zwieback, gelatin, and rice. Pepsin and hydrochloric acid have not been used as a routine treatment, nor have irrigations been given. There has been less prostration, clean, moist tongue, no tympanites or diarrhea, and loss of flesh has been diminished.—Medical Record, June 20, 1908.



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NOVEMBER 15, 1908

SANITATION AND HYGIENE FOR THE FARMER

Dr. J. G. Parsons, of Brookings, S. D., is the editor of a department of Sanitation and Hygiene in the "Minnesota and Dakota Farmer." He has been given a free hand and is trying to educate the readers of the paper in matters of great interest to them and the state at large. He hopes to arouse the farmers' interest in matters of public health and in this way secure an appropriation for the support of the State Board of Health of South Dakota.

The present board is allowed \$500 per annum! A sum insufficient to print the necessary blanks to carry on a part of the work. If the matter is properly presented the State Board should have not less than \$25,000 in order to organize a working body and to protect the public. South Dakota has a number of large towns and many small villages that need protection and advice, and as the state grows in population its public-health needs will increase. The Minnesota Board receives only a fair sum for its work and needs much more. The pollution of waters and the protection of streams and lakes, is one of the perplexing problems of the day, and large sums of money are needed to prevent the spread of disease. It is to be hoped that the next session of the South Dakota legislature will see that its State Board of Health is provided with every

means to protect the future health of a rapidly growing state.

At the last meeting of the South Dakota State Medical Association a resolution was passed making the paying and receiving of commissions by physicians sufficient grounds for expulsion from the Association. The newspapers have commented on the subject, and if the farmer reads of this nefarious practice it will cause many heart-throbs.

In a personal letter, Dr. Parsons asked if it would be wise to make editorial mention of this matter in the JOURNAL-LANCET and if it would injure the feelings of "some of the Minneapolis men who are notorious givers of commissions!" The editor of the JOURNAL-LANCET is always ready to urge the needs of education in public and personal hygiene and the exposure of quacks and grafters, regardless of the feelings of the injured. May the Department of Sanitation and Hygiene in The Farmer prosper!

NEWSPAPER "NEW CURES"

The newspaper believes in advertising—when it is paid for, but incidentally gives an extraordinary lot of space to the alleged new and untried cures. Of course this is classed as news, but to the physician it looks like poor and uncalled-for comment on subjects that are not understood by the average layman.

The "new cure for tabes" that was heralded in the daily press, together with a picture of the claimant, was of the kind that might be called retro-active.

All new cures that have not been given sufficient trial by more than one experimenter are usually not long-lived, and in the beginning they arouse false hopes that later are not realized. The sufferer from tabes grasps at any new remedy and will go to any expense to gain improvement.

Unfortunately, the newspapers do not digest the fundamentals in experimental medicine, but seek only the sensational details. By the time the comment goes to press it has been so distorted that its author fails to recognize his literary child—unless he be a good advertiser.

Dr. Denslow, formerly of St. Paul and London and now residing in New York, read a paper in which he advocated a new treatment for locomotor ataxia. This new treatment consisted of the detection and cure of linear ulcers in the urethra.

He believed that the pains and incoördination

of ataxia could be relieved by the cure of these ulcers. This statement was so startling and, to the newspapers, so unique and original as a causative factor that it was at once forcefully headlined and sent broadcast over the country.

In all probability Dr. Denslow did not mean to say that this was the pathological lesion in tabes, yet this impression got abroad, and the picture of the author with a short biography has been reproduced so often that it looks like straight advertising. Every neurologist knows that tabes is due to a lesion in the spinal cord, and that the majority of tabetics improve temporarily under most forms of treatment, only to recede or remain stationary after the expectant period has passed. It is true also that many tabetics are improved by simple and sane methods of care, exercises, and drugs, and not a few regain their powers of coördination up to a point when they are classed as *improved* or *stationary*. Even these cases show a persistence in their eye symptoms, loss of light reflex, and their knee-jerk phenomena.

It must be admitted that only a very small percentage have ulcers in the urethra, which are probably due to an old gonorrhea. These cases may be relieved of some of their pains and may show improvement in other symptoms, but they go no farther than the other improved cases that are treated by skilled men.

The fault in the newly advertised cures, lies in the building up of false hopes that cannot be realized, and it brings out a horde of old cases who expect much, who expend much, and who eventually are disappointed. Such is the effect of Denslow's suggestion. Knowing this, the cost of treatment at his hands advanced to \$500 for each case.

It is rumored that this same man attempted to exploit his new treatment in London at five hundred to one thousand guineas (twenty-five hundred to five thousand dollars)! This is sufficient to stamp the new cure as suspicious and doubtful.

Lately, an article has been going the rounds in the press in which the imagination of a reporter led him to write of a new cure for tubercular joints,—an injection of bismuth and vaseline. The article stated that it had been tried in a dozen cases in Chicago, and a cure accomplished in six weeks! Any thoughtful physician or surgeon knows the impossibility of so rapid a cure in such cases. These articles do an immense amount of harm and should be combated by every medical man.

The influence of mind over disease is admitted in a number of disease-states, but it has its limitations, and this should be recognized. The only way to reach the people is to educate them to accept carefully worked-out methods, and to reject the methods of the charlatan and also to reject sensational cures by new remedies, advertising quacks and untried nostrums.

Popular articles by well-known men on everyday topics that are of a medical nature are legitimate and commendable, and they should be published broadcast. It would be well to extend such information through the rural press, which reaches an enormous mass of people who read, devour, and believe everything that a quack has to say, and who look upon the weekly paper as a carrier of general and accurate information.

REPORTS OF SOCIETIES

MINNESOTA ACADEMY OF MEDICINE

The annual meeting of the Academy was held at the Minneapolis Club, Wednesday, Oct. 14th, at 8. p. m. The President, Dr. A. J. Gillette, was in the chair, and there were present 45 members and four guests.

The annual report of the Secretary-Treasurer was read and approved, and the election of officers followed, which resulted in the choice of:

President, Dr. J. E. Moore, of Minneapolis.

Vice-president, Dr. Haldor Sneve, of St. Paul.

Secretary-Treasurer, Dr. A. W. Dunning, of St. Paul.

Executive Committee: Dr. J. L. Rothrock, St. Paul; Dr. S. Marx White, Minneapolis; Dr. C. M. Carlaw, Minneapolis.

Brief clinical reports were presented as follows:

"Post-operative Treatment." By Dr. H. J. O'Brien, St. Paul.

"An Interesting Case of Extra-uterine Pregnancy." By Dr. A. W. Abbott, Minneapolis.

"Spasmodic Torticollis." By Dr. H. B. Sweetser, Minneapolis.

"Non-descent of the Testicles with Operation for Relief of the Same." By Dr. F. R. Woodard, Minneapolis.

"Elephantiasis Femoris." By Dr. Arnold Schwyzer, St. Paul.

"New Uses for the Moorhoff Bone Wax." By Dr. James E. Moore, Minneapolis.

Interesting cases were also reported by Drs. Todd, Dunsmoor, Nippert, Litzenberg, and Law.

A. W. DUNNING, M. D. Secretary.

HENNEPIN COUNTY MEDICAL SOCIETY

The monthly meeting was held on Oct. 5th. The President, Dr. F. A. Knights, in the chair and 25 members present.

The name of Dr. Ray Robert Knight was proposed for membership.

Dr. S. P. Crume read a paper on "Intiavenous Injections of Mercury," and the paper was discussed by Drs. L. M. Crafts, S. E. Sweetzer, Oscar Owre, J. A. Watson, and W. D. Sheldon, the discussion being closed by the essayist.

Dr. G. C. Barton read a paper on "An Analysis of One Hundred and Eight Consecutive Abdominal Operations without a Death." This paper was discussed by Dr. A. E. Benjamin.

A mid-monthly meeting was held on Oct. 19 in connection with the Northwestern Branch of the American Pharmaceutical Association. Dr. F. A. Knights presided and there were 60 pharmacists and physicians present.

Dean F. J. Walling read a paper on "The Work of the Council on Pharmacy and Chemistry of the A. M. A." The paper was discussed by Drs. J. F. Schefcit and B. M. Behrens.

Dr. F. J. Walling introduced the following resolution, which was unanimously adopted:

The Hennepin County Medical Society and the Northwestern Branch of the American Pharmaceutical Association in joint session indorse the modified rules of the Council on Pharmacy and Chemistry of the American Medical Association (Journal of the A. M. A., Sept. 26, 1908), especially the three rules whereby the Council after January 1, 1909, will not accept (1) pharmaceutical mixtures whose titles indicate their therapeutic action or use; (2) pharmaceutical mixtures whose titles are not descriptive of their composition; (3) preparations which are unessential modifications of an official or otherwise well-known preparation.

The Council is also indorsed in its attempt to provide standards for unofficial non-proprietary preparations and for its efforts towards stimulating scientific prescribing as illustrated in its action on digestive impossibilities and its request to the A. Ph. A. to eliminate elixir digestivum compositum from the National Formulary.

Dr. I. W. Harrah read a paper on "Specification of Manufacturing Houses in Prescribing." The paper was discussed by C. H. Huhn, E. M. LaPenotierre, Dr. E. Z. Wanous and Dean F. J. Walling.

C. B. McCall read a paper on "Counter-prescribing and Patent Medicines," and Dr. C. A. Donaldson gave a paper on "Dispensing by Physicians." These papers were discussed by Drs. Ivan Sivertsen, G. C. Barton and A. C. Tingdale and by A. D. Thompson and Thomas Voegeli.

Dr. J. C. Litzenberg moved that Dean F. J.

Walling for the pharmacists and Dr. F. A. Knights for the physicians appoint a committee to draw up suitable resolutions endorsing the stand taken by certain of the magazines and newspapers in refusing to sell their advertising space to patent medicine and nostrum manufacturers. The resolution was adopted unanimously.

C. H. BRADLEY, M. D., Secretary.

CHISAGO-PINE SOCIETY

The Society met at North Branch on Oct. 13, with 8 members present.

Dr. H. W. Froelich, of Pine City, read a paper on "Cholera Infantum."

Officers were elected as follows: President, Dr. Thos. Zeien, North Branch; vice-president, Dr. H. W. Murdock, Taylors Falls; secretary, Dr. C. A. Anderson, Rush City; treasurer, Dr. H. W. Froehlich, Pine City.

C. A. ANDERSON, M. D., Secretary.

RED RIVER VALLEY SOCIETY

The Society met at Crookston on Oct. 27th. Papers were read as follows:

"Anesthetics and their Administration." By Dr. A. Kahala, Erskine.

"Appendicitis." By Dr. P. O. Neraal, McIntosh.

"Fractures of the Lower Extremity." By Dr. H. Holte, Crookston.

The meeting was one of the most enthusiastic and best we have had.

H. H. HODGSON, M. D., Secretary.

STEARNS-BENTON COUNTY SOCIETY

The Society met at St. Cloud on Oct. 22d, with 13 members present. The following papers were read:

"Physiologic and Pathologic Relation of the Upper Air-Tract." By Dr. W. N. Porteous, Minneapolis;

"Heaven and Hell in the Obstetric World." By Dr. W. Stuart Leech, Brooten;

"Club-Foot." By Dr. James H. Beaty, St. Cloud;

"Stomach Pains." By Dr. Max J. Kern, St. Cloud.

A thorough discussion followed the reading of the papers.

J. C. BOEHM, M. D., Secretary.

HOUSTON-FILLMORE COUNTY SOCIETY

The Society met at Hokah on Oct. 1st, with 10 members present. Papers were read as follows:

"A Type of So-called Lame-Back." By Dr. E. Evans, LaCrosse, Wis.

"Enlarged Tonsils." By Dr. J. A. L. Bradfield, La Crosse, Wis.

O. F. FISCHER, M. D., Secreary.

MOWER COUNTY SOCIETY

The quarterly meeting of the Society was held at Austin on Oct. 14th. Papers were read as follows:

"Some Important Principles of Dietetics." By Dr. Schultz, Waltham.

"Skin Diseases of Minnesota." By Dr. Cobb, Lyle.

Dr. A. N. Collins was admitted to membership, and officers were elected for next year as follows: President, Dr. C. C. Leek, Austin; vice-president, Dr. C. F. Lewis, Austin; secretary, Dr. O. H. Hegge, Austin; treasurer, Dr. G. J. Schottler, Dexter.

O. H. HEGGE, M. D., Secretary.

SEVENTH DISTRICT (S. D.) SOCIETY

The Society met at Dell Rapids, S. D., on Oct. 5th, the President, Dr. C. A. Butler, being in the chair. Papers were read as follows:

"Cystic Degeneration of the Chorion." By Dr. Geo. W. Bliss, Valley Springs. Dr. Bliss reported four cases of the disease which occurred in his own practice.

"Uterine Displacements." By Dr. W. J. Woolston, of Dell Rapids.

Both papers were discussed at length, and after a short business meeting, a banquet was given at the Dells Hotel, which pleased the out-of-town men very much.

NEWS ITEMS

Dr. Harry Thurber has located at Trent, N. D.

Dr. A. W. Thomas has located at Finley, N. D.

Dr. Marcus Tessler, of St. Paul, died last month.

Dr. O. A. Kabrick, of Butterfield, has moved to Odin.

Dr. John C. Koch, of Blackduck, was recently married.

Dr. D. C. Sherer has moved from New Ulm to Ruthton.

Dr. I. M. Roadman has moved from Bovey to Onamia.

Dr. N. S. Lane, of Winona, has moved to Spokane, Wash.

Dr. H. T. Kenney has moved from Bruce, S. D., to Pierre, S. D.

Dr. C. O. Estrem, of Minneapolis, has located in Madison, S. D.

Dr. Wm. Magee, of Chicago, has located in Watertown, S. D.

Dr. E. Q. Extel, of Cincinnati, Ohio, has located in Ellendale.

Dr. Martin Kranz has moved from Hinckley to Mandan, N. D.

Dr. C. W. Wilkowske, of Faribault, has returned from Europe.

Dr. F. O. Fisher has moved from West Duluth to Shell Lake, Wis.

Dr. J. C. Lawver has moved from Spencer, S. D., to Roswell, S. D.

Dr. Isaac M. Cady of Bancroft, Mich., has located at Dickinson, N. D.

Dr. H. P. Bacon, of Milaca, has been doing post-graduate work in Chicago.

Dr. Isaac Seely, a graduate of University of Iowa, has located in Northfield.

Dr. J. H. Leebens, a graduate of the P. & S., Chicago, has located at Lismore.

Dr. Stephen Olney has moved from Sioux Falls, S. D., to Sioux Rapids, Ia.

Dr. J. W. Andrist will give up practice at Ellendale and locate on the coast.

Dr. H. R. Mackay, of Rapid City, Mont., died last month at the age of 44.

Dr. P. O. Neraall, of McIntosh, has been doing post-graduate work in Chicago.

The new hospital at Northwood, N. D., was dedicated in October. It cost \$25,000.

Dr. A. E. Johnson, of Red Wing, has been doing post-graduate work in Chicago.

Dr. C. H. Calkins, of Custer, S. D., will spend two months in Colorado for his health.

Dr. S. S. Kilvington has moved from Dundas to Hopkins, a suburb of Minneapolis.

Dr. D. F. Wood, of Hanska, has gone to Europe and will be absent several months.

Dr. L. L. Gibbon, of Lowry, was married last month to Miss Anna Mundin, of Mapleton.

Dr. W. R. Neumarker, of Edgemont, S. D., is spending his vacation in the southern states.

Dr. George H. Richards has moved from Westington Springs, S. D., to Chamberlin, S. D.

Dr. B. C. Dorsett, of the St. Peter State Hospital, has gone into general practice at La Crosse, Wis.

Dr. C. R. Christenson, of Starbuck, has been compelled to give up practice on account of poor health.

Dr. R. M. Burlingame, of Watertown, S. D., was married last month to Miss Maud Sears, of the same city.

Dr. George Schultz, of Owatonna, is in Europe, where he will remain four months for special study.

Dr. Sylvester Shannon has moved from West Duluth to Barnum, having purchased the practice of Dr. Speck.

Dr. K. H. Mallarian, of Fargo, N. D., will retire from practice for three years and visit his old home in Turkey.

Dr. David J. Doherty, a graduate of the State University, class of '87, died in October in Chicago, at the age of 58.

Dr. W. J. McRoberts, of Hot Springs, S. D., is taking a month's post-graduate course on electro-therapeutics in Chicago.

Dr. P. F. Brown, of the More Hospital, Eveleth, was married last month to Miss Caroline L. Kidney, of Janesville, Minn.

Dr. Arthur N. Collins, of Austin, formerly of Rochester, was married in October to Miss Florence E. Johnson, of Minneapolis.

Bethesda Hospital, of St. Paul, is to have a new addition to its building, the same to cost \$50,000 and have thirty-five rooms.

The hospital association of Streeter, N. D., has decided to go forward with building operations, and work has already been begun.

Dr. Horace Newhart, of Minneapolis, has returned from a three months' trip to Europe. Most of his time was spent in the hospitals of Paris, Berlin and Vienna.

Dr. Le Grand N. Denslow, of New York City, whose name has appeared in the press of the country as the discoverer of a cure for locomotor ataxia, formerly practiced in St. Paul.

Dr. Ralph C. James, of the Rood Hospital at

Hibbing, died of ptomaine poisoning the last of October, at the age of 27. Dr. James was the son of Dr. J. H. James, of Mankato.

Dr. A. Eichler, of Hamline; Dr. Charles Hensel, of the State University, and Dr. E. C. Gotes, of the University of Chicago, are the new internes in the City Hospital of St. Paul.

Dr. B. M. Behrens, of Minneapolis, died last month. Dr. Behrens was reading a paper before the Hennepin County Medical Society when he was stricken with paralysis and fell to the floor.

Dr. Frank W. Epley, of Richmond, Wis., died the last of October at the age of 57. Dr. Epley was a graduate of Rush, and began practice in New Richmond in 1877, practicing there thirty-one years.

The Norwegian Medical Club, of Minneapolis, has elected the following officers for the current year: President, Dr. Chas. F. Disen; vice-president, Dr. Ivar Sivertsen; treasurer, Dr. R. M. Peterson.

The Keokuk Medical College, of Keokuk, Ia., has been compelled to close its doors by a state law raising the standard of requirements of medical colleges. The college will be merged with the Drake University, of Des Moines, Ia.

Drs. W. L. Palmer and F. W. Calhoun, of Albert Lea, have formed a partnership. Dr. Mary E. Hood, who has been associated with Dr. O. A. Burton, is now associated with Drs. Palmer & Calhoun. Dr. Burton will spend the winter in the South.

The Sisters' Hospital at Hot Springs, S. D., will have, in addition to their new \$50,000 building, a complete and modernly equipped bathhouse with a capacity of 250 baths a day. The bathhouse with its thirty-five private rooms will give the hospital a capacity of 140 patients.

FOR SALE

Electric vibrator; has been used but little and is in first-class condition. Cost \$50; will sell for \$25. Inquire 340 Andrus building, Minneapolis.

HOSPITAL POSITION WANTED

A nurse of five years' experience would like a hospital position; competent to take charge. References given. No objection to going to the country. Address C. M. S., care of this office.

PRACTICE FOR SALE

A \$3,500 to \$4,000 practice in Western Minnesota, town of about 1,440 inhabitants. Good surgeon and one that can speak German could easily double income in a year. Address No. 43, St. Barnabas Hospital, Minneapolis.

REPORTED FROM 72 CITIES HAVING A POPULATION OF 1,500 OR UPWARDS
FOR THE MONTH OF AUGUST, 1908

CITIES	Population of U. S. Census of 1900	Population of State Census of 1905	Total Deaths	Tuberculosis of Lungs	Other Forms of Tuberculosis	Pneumonia	Bronchitis	Diphtheria	Scarlet Fever	Measles	Smallpox	Whooping Cough	Cerebrospinal Meningitis	Typhoid Fever	Diarrheal Dis- eases of Child- ren	Cancer	Puerperal Septicemia
Albert Lea.....	4,500	5,657	4	1												1	
Anoka.....	3,769	4,053	1														
Austin.....	5,474	6,489	5														
Barnesville.....	1,326	1,566	*														
Bemidji.....	2,183	3,800	18	2													
Blue Earth.....	2,900	2,364	2														
Brainerd.....	7,524	8,134	17	2													
Chaska.....	2,165	2,085	*														
Chatfield.....	1,426	1,300	5														
Cloquet.....	3,074	6,117	*														
Crookston.....	5,359	6,794	12	2	1												
Detroit.....	2,060	2,149	7														
Duluth.....	52,968	64,942	71	9	1	3		1	1					4	15	2	1
E. Grand Forks.....	2,077	2,487	4														
Ely.....	3,712	4,045	4														
Eveleth.....	2,752	5,332	4														
Faribault.....	7,868	8,279	5	1													
Fairmont.....	3,440	2,955	1														
Fergus Falls.....	6,072	6,692	4														
Granite Falls.....	1,214	1,340	2														
Hastings.....	3,811	3,810	2														
Hutchinson.....	2,495	2,489	1														
Jordan.....	1,270	1,311	*														
Lake City.....	2,744	2,877	3	1													
Litchfield.....	2,230	2,415	2					1									
Little Falls.....	5,774	5,856	4	1													
Luverne.....	2,223	2,272	5														
Le Sueur.....	1,937	1,842	3														
Madison.....	1,336	1,604	3														
Mankato.....	10,559	10,996	19	1													
Marshall.....	2,088	2,243	2														
Melrose.....	1,768	2,151	2														
Minneapolis.....	202,718	261,974	262	23	4	18		8				3	3	4	32	16	3
Montgomery.....	979	1,281	1														
Montevideo.....	2,146	2,595	3	1													
Moorhead.....	3,730	4,794	3														
Morris.....	1,934	2,003	*														
New Prague.....	1,228	1,419	1														
New Ulm.....	5,403	5,720	4														
Northfield.....	3,210	3,438	7														
Ortonville.....	1,247	1,612	*														
Owatonna.....	5,561	5,651	4														
Pipestone.....	2,536	2,885	1														
Red Lake Falls.....	1,885	1,797	0														
Red Wing.....	7,525	8,149	18		4			1									
Redwood Falls.....	1,661	1,806	1														
Renville.....	1,075	1,229	*														
Rochester.....	6,843	7,233	20														
Rushford.....	1,100	1,133	3	1													
St. Charles.....	1,304	1,238	1														
St. Cloud.....	8,663	9,422	8	1													
St. James.....	2,607	2,320	0					1									
St. Paul.....	163,632	197,323	166	16	4	3		2				5	1	2	28	11	
St. Peter.....	4,302	4,514	2														
Sauk Centre.....	2,220	2,463	4	1													
Shakopee.....	2,046	2,069	5														
Sleepy Eye.....	2,046	2,312	*														
So. St. Paul.....	2,322	3,458	5	2													
Stillwater.....	12,318	12,435	8	1													
Thief River Falls.....	1,819	3,502	*														
Tower.....	1,366	1,340	*														
Tracy.....	1,911	2,015	1														
Virginia.....	2,962	6,056	9	1		2											
Wabasha.....	2,528	2,619	*														
Warren.....	1,276	1,640	1														
Waseca.....	3,103	2,838	2	1													
Waterville.....	1,260	1,383	1														
West St. Paul.....	1,830	2,100	4														
Willmar.....	3,409	4,040	2		1												
Windom.....	1,944	1,884	1														
Winona.....	19,714	20,334	18	2													
Worthington.....	2,386	2,276	1			1											

*No. Report Received Health officer not doing his duty

REPORTED FROM 65 VILLAGES HAVING A POPULATION OF 1,000 OR UPWARDS
FOR THE MONTH OF AUGUST, 1908

VILLAGES	Population of U. S. Census of 1900	Population of State Census of 1905	Total Deaths	Tuberculosis of Lungs	Other Forms of Tuberculosis	Pneumonia	Bronchitis	Diphtheria	Scarlet Fever	Measles	Smallpox	Whooping Cough	Cerebrospinal Meningitis	Typhoid Fever	Diarrheal Dis- eases of Children	Cancer	Puerperal Septicemia
Ada.....	1,253	1,515	1														
Adrian.....	1,258	1,184	1														
Aitkin.....	1,719	1,896	5														
Akeley.....		1,636	2	1													
Alexandria.....	2,681	3,051	4		1												
Appleton.....	1,184	1,321	1														
Belle Plaine.....	1,121	1,301	1														
Benson.....	1,525	1,766	0														
Breckenridge.....	1,282	1,850	4														
Buffalo.....	1,040	1,124	1														
Caledonia.....	1,175	1,405	1														
Canby.....	1,100	1,505	1												1		
Cannon Falls.....	1,239	1,460	0														
Cass Lake.....	546	1,062	1														
Chisholm.....		4,231	4	1		1											
Clayton.....	962	1,056	1														
Delano.....	967	1,023	1														
Fosston.....	864	1,000	1														
Frazee.....	1,000	1,146	1	1													
Glencoe.....	1,780	1,805	0														
Glenwood.....	1,116	1,718	1														
Graceville.....	856	1,032	1														
Grand Rapids.....	1,428	2,055	5			1	1								2		
Hallock.....	805	1,014	1														
Hibbing.....	2,481	6,566	8												4		
Jackson.....	1,756	1,776	0														
Janesville.....	1,254	1,205	1														
Kasson.....	1,112	1,049	1														
Kenyon.....	1,202	1,252	2												1		
Lake Crystal.....	1,215	1,231	3														
Lanesboro.....	1,102	1,041	0														
Long Prairie.....	1,385	1,256	1														
Madelia.....	1,272	1,290	1														
Milaca.....	1,204	1,319	2														
Mountain Lake.....	959	1,063	1														
North Mankato.....	939	1,129	0														
North St. Paul.....	1,110	1,400	0														
Olivia.....	970	1,019	1														
Osakis.....	917	1,056	1														
Park Rapids.....	1,313	1,719	1														
Pelican Rapids.....	1,033	1,095	1														
Perham.....	1,182	1,366	2														
Pine City.....	993	1,092	0														
Plainview.....	1,038	1,140	1									1					
Preston.....	1,278	1,320	1	1													
Princeton.....	1,319	1,704	1														
Rush City.....	987	1,041	1														
Rushford.....	1,062	1,040	0														
St. Louis Park.....	1,325	1,491	1														
Sandstone.....	1,189	1,589	2												1		
Sauk Rapids.....	1,391	1,552	1														
Scanlon.....		1,122	2														
South Stillwater.....	1,422	1,572	0														
Springfield.....	1,511	1,546	1														
Spring Valley.....	1,770	1,573	1														
Staples.....	1,504	2,163	2														
Two Harbors.....	3,278	4,402	5	1											2		
Wadena.....	1,520	1,868	1													1	
Wells.....	2,017	1,814	1														
West Minneapolis.....	2,250	2,530	1														
Wheaton.....	1,132	1,346	0														
White Bear Lake.....	1,288	1,724	2	1													
Winnebago City.....	1,816	1,553	0														
Winthrop.....	813	1,031	1														
Zumbrota.....	1,119	1,129	3														
State Institutions.....			31	5		2										1	
Other parts of State.....	1,012,328	1,085,886	594	41	9	12	1	16	1			6	4	6	64	39	1
Total for State.....	1,751,395	1,979,658	1467	123	25	43	2	32	2			17	14	36	188	89	5

134 Still births and premature births, not included in above totals

*No report received. Health officer not doing his duty

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SOME SURGICAL ASPECTS OF STOMACH AND DUODENUM*

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CHICAGO

It is eminently proper to consider the stomach and duodenum together in their surgical aspect, because their diseases are so intimately related that one of these organs can never be properly considered alone. These organs are both developed from the foregut embryologically. Physiologically, they both prepare the food so that it may be absorbed in its passage through the portions of the alimentary canal beyond the duodenum. Anatomically, the stomach and duodenum together form a very perfect machine. The great pouch to the left provides facilities for storing an entire meal. At the same time its lining provides the acid digestive ferments, and its muscular walls provide the necessary facilities for mixing the food with these digestive fluids. The thick muscular walls of the portion of the stomach to the right provide a grinding apparatus which reduces the size of the particles of food that have been stored during the ingestion of each meal.

In order that this physiological step should be well accomplished, the pylorus prevents the escape of the stomach-contents into the duodenum until the grinding and acid digestion of a certain portion of food in this part of the stomach have been accomplished. Then the pylorus opens, and a quantity of food is emptied into the duodenum by the elevation of the greater cur-

vature of the stomach, as demonstrated by Cannon and others.

The presence of food in the duodenum causes a flow of bile and pancreatic fluid into this cavity, which provides the elements required for alkaline digestion. From two to ten centimeters below the entrance of the common duct into the duodenum there is a thickening of the circular muscle fibres, in most cases not sufficient to make a true sphincter, but sufficient to make a mixing apparatus of the duodenum, the food being shaken backward and forward between the pylorus and this point while bile and pancreatic juice are introduced.

It is important to bear in mind the excellent arrangement of this apparatus for digestion, in order to judge well of the surgical methods to be employed for the relief of gastric and duodenal disease, because every one of these surgical operations interferes, in some way, with one or another of the anatomical arrangements. If then, in any given case of disease of the stomach or duodenum, it is possible to restore these organs to a normal, or a nearly normal, condition by the use of dietetic, hygienic, or medicinal treatment, so that the original mechanism can be maintained, the patient is, of course, in a vastly better condition than he would be with a changed apparatus after the most perfect surgical operation. By far the greatest number of surgical operations are performed upon the

*Read at the 27th annual meeting of the South Dakota State Medical Association, held at Yankton, September 2-4, 1908.

stomach for the relief of conditions either directly or indirectly due to gastric ulcer. These conditions are primarily hemorrhage, perforation, or pyloric obstruction due in the early stages to spasmodic contraction and later to induration or cicatricial contraction.

Secondarily, we encounter adhesions of other organs, perforation into other structures, subphrenic abscess, dilatation of the stomach, and, last but not least, implantation of carcinoma upon the ulcer.

All of these conditions have been so frequently discussed and so thoroughly confirmed that it will not be necessary to do more at this point than to state that in a large number of cases we have been able to follow these various steps of development to the time when the patient came under our care. There is, however, no doubt but that for every case that ultimately comes under the care of the surgeon there is a large number of cases which suffer from ulcer of the stomach or duodenum which are restored to a normal condition by the use of hygienic, dietetic, and medicinal treatment. It is true that most patients who ultimately come under surgical treatment have been apparently cured a number of times in the past by non-surgical methods, only to suffer relapses until they are forced into the hands of a surgeon as a last resort. This, however, should not occur as often as it does. Our observations seem to bear out the fact that most patients suffering from gastric or duodenal ulcers habitually subject themselves to bad hygienic and dietetic conditions, and that their relapses are usually due to the fact that they go back each time to their bad habits of living and eating after they have recovered. If these patients were subjected to severe observance of proper hygiene and diet until they had formed proper habits, it is likely that the field of stomach surgery would be enormously reduced.

It should be remembered, at this point, that after these patients have obtained relief from their condition through a surgical operation they will be compelled to observe proper hygiene and diet, in order to remain in a fairly comfortable condition, because the changed apparatus will not work comfortably if subjected to dietetic abuses, consequently if these patients will take the same precautions after recovering from their primary attack of gastric ulcer they will be compelled to take after their operation, most of them will remain well and will consequently never need surgical aid. This reasoning has been born out

very thoroughly by many experiments on the lower animals. Futterer found that artificially produced gastric ulcers heal regularly unless the resistance of the animal is seriously impaired by producing an artificial anemia. Turk found it necessary to feed great quantities of colon bacilli in order to produce artificial ulcer in animals, and many other experimenters have shown that the stomach has great ability to heal its own ulcers under fair conditions. If we bear these facts in mind it will become plain that, in order to prevent recurrence, the general health of the patient, as well as his diet, must be kept under supervision for a long time, and that, if this is done, the number of surgical ulcers and the number of sequelæ of gastric ulcer requiring surgical relief will be greatly reduced. It will also become plain that it is quite as important to regulate the hygiene and the diet of patients who have undergone surgical operations as it is to do this for patients whose ulcers have healed under non-surgical treatment.

It is quite useless to discuss the surgical technique, because one might read about stomach surgery for a lifetime, and still be unable to perform an operation upon this organ properly. One must observe the work at the operating-table in order to obtain a proper appreciation of the important points. Fortunately, the great clinics in this country and abroad are open to those who desire to become familiar with proper methods, and so I shall simply lay down a few rules which have been quite generally accepted as safe and sound.

Most of the surgeons present have seen all of these principles applied in the wonderful clinic of Drs. W. J. and C. H. Mayo, but I shall repeat them in the form of conclusions:

1. The amount of traumatism must be reduced to a minimum.
2. The intra-abdominal organs must be exposed as little as possible to cold air or cool pads.
3. The patient must be placed in a sitting posture as soon as possible after the operation.
4. In case of closure of perforation the direction of the wound must be chosen so as not to result in obstruction later as a result of cicatricial contraction.
5. In case of excision of a neoplasm all the tissue closely connected by lymphatics must be removed with the growth.
6. In gastro-enterostomy the lowest portion of the stomach must be chosen, no matter whether anterior or posterior gastro-enterostomy

be performed, the latter, however, being preferable.

7. There must be no tension upon sutures in gastric operations.

8. Except in complete gastrectomy the coronary artery must always be preserved.

9. In patients with an unusually fat transverse mesocolon, in whom posterior gastroenterostomy is performed, the opening should be torn very large, and the edges should be sutured to the stomach, in order to prevent obstruction.

10. In cases of acute gastric dilatation following any stomach operation, a stomach-tube should at once be introduced, and gastric lavage should be employed, care being taken not

to introduce more than one-fourth liter of water at a time.

11. In complete gastrectomy a long loop of jejunum should be brought up to the lower end of the esophagus, which should be implanted into the side of the jejunum, and there should be an enterostomy between the two limbs of the jejunum, which go up to meet the esophagus.

12. The simplest possible technic should be employed, preferably without the use of mechanical apparatus.

13. These patients should be controlled in the matter of their diet and general hygiene for a long period of time after the operation.

14. Conclusion No. 13 should also be applied to all cases of ulcer treated non-surgically. (For discussion see page 490.)

GASTRIC ULCER*

Surgeon to Our Lady of Lourdes' Hospital

By F. E. WALKER, M. D.

HOT SPRINGS, S. D.

The true and supposed causes of gastric ulcer are many, some authors conceding similar cardinal factors, yet all making marked differentiation. The causes, which may be real, imaginary, primary, or secondary, are not definitely known in all cases, and will not be until a more careful and extended study has been made of this disease. As a means to this end, it is to be regretted that the physician has not better noted the bedside history, that the expert diagnostician has not been enabled to teach us more of this important subject, that the surgeon has not been called in oftener by the internist, that more autopsies have not been made in all obscure deaths due to diseases of the abdomen, as well as other organs, especially the heart and brain, and that the pathologist has not had a better opportunity to aid all in ante-mortem, medical, mechanical, operative, and post-mortem work.

The great importance of the subject and the fact that in the great majority of advanced cases it is looked upon as a purely surgical one, together with the fact that all treatment of the past and present, medical, mechanical, or surgical, has failed, must necessarily engage the scientific interest of the profession that we may

attain the highest consummation of perfect art in the skillful treatment of this painful, distressing, and very dangerous malady. Like the now well-known treatment of diseases of the appendix and gall-bladder, which not many years ago were diseases attributed to bowel and gastric inflammation, with an appalling record of high mortality, gastric ulcer also has, without question, filled many a grave, the cause of death being unknown. It is now an established fact that many sudden deaths on the street, in the offices or the homes, were due to gastric ulcer which perforated and caused sudden and alarming, as well as fatal, hemorrhage, while a snapshot diagnosis of heart-failure or apoplexy was given, and no attempt made by autopsy to determine the true cause.

We must acknowledge another fact in connection with this disease, that, under the careful study of this affliction by competent men, there are many more causes of gastric ulcer than was heretofore supposed, and we shall be asked, sooner or later, by these same authorities to eliminate, in part or in whole, such terms in diagnosis as nervous dyspepsia, gastralgia, hyperchlorhydria, and cardialgia. In fact, a few of these terms, if not all, will become obsolete through future study and investigation. Without question, we are rapidly reaching a stage in the knowledge of ulcer where the pathologic

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conditions incident thereto will readily account for the diversified so-called dyspepsias and allied terms, and, to quote C. A. L. Reed, in his article on "Chronic Dyspepsia," "will eliminate gastric ulcer; and the cases of chronic gastric catarrh, dyspepsia, gastralgia, and cardialgia not due to gall-stones or the appendix will be reduced to small proportions." Many dislike to give up these terms and misnamed diseases, for they "cover a multitude of sins," but when we consider that they really imply the existence of gastric disturbance with no known pathology, their use must in time become exceedingly limited, and will perhaps serve to designate one or more subjective or objective symptoms of gastric ulcer.

Another thing we must bear in mind respecting the so-called ulcer, is, that it is not a true ulcer, but, rather, a progressive necrosis of cellular elements, and that the primary etiological factor is perhaps entirely without the stomach, existing in the duodenum immediately below a patulous or partially patulous pylorus with regurgitation of the predigested gastric food, associated with the pancreatic and perhaps the biliary secretions and an unusual acidity of this fluid, which, acting as an irritant, causes undue contraction, with a consequent erosion of the mucous membrane. Bearing this in mind, it is well to direct our attention to the primary excitant, as well as to the secondary result.

While we have obtained the three great cardinal points in treatment which have long become classic, namely, rest, diet, and drainage, just how to secure these delectable results is yet to become a future glory.

That gastrochirurgery has not effectually alleviated the condition, that it has cured but few, that it is never certain that each and every ulcer has been eliminated, that it has not substantially changed the characteristic mucous membrane so diseased, that it does not always provide the ideal drainage, that it does not prevent new adhesions or undesirable cicatrices, and that it is not without more or less grave danger during and after operation, goes without saying.

The few cases upon whom I have operated have not received the material benefit sought, and those whom I have observed and treated after operation by competent surgeons were not cured in all instances, but oftentimes their condition was pitifully aggravated, either as a result of inefficient surgery or because of progressive, overlooked or newly developed ulcer.

It is true that the majority of patients op-

erated on leave the hospital greatly improved, not so much the result of the scalpel, but as a result of the enforced rest, the diet, and more or less temporary drainage. The end-results, six months and more after, are the best criterion of cure, and certain it is that surgical treatment is not as successful as the yearly hospital reports and hastily compiled records would indicate.

That better results are obtainable through absolute cell-rest, rectal drainage, and dietetics, massage, baths, and limited drug administration, has been most convincing to me during the past three years, and this I firmly believe, from my limited experience and from observation through others, to be nearer perfection in all instances except a few of the greatly aggravated cases of extreme hemorrhage, the alarming acute hemorrhagic ones, and those due to perforation. To alleviate the pain resulting from cicatricial tissue and adhesions, is, of course, a legitimate and necessary part of the cure, but in such patients there is no occasion for an infolding of a previously inflamed area or for a gastro-enterostomy. Following out in detail the treatment as will be outlined later, I submit the following fourteen cases treated during the past three years:

One case of acute and very severe hemorrhage, which came on very suddenly. This patient, a male, aged 59, had always been well and hearty. Two weeks prior to my consultation he had a severe hemorrhage, and was advised to have an operation. He returned to his home after the consultation, and two days after was seized with excruciating pain in the region of the pylorus, vomited a large quantity of blood, and became unconscious. His physician applied ice and gave him morphine. I saw him the following morning. Condition: exceedingly weak; pulse 138; respiration 34; temperature 96.4°; abdomen immensely distended, and the patient was semicomatose. Operation was refused. Death followed ten hours later. Autopsy revealed a large perforation on the anterior cardia.

Three cases of acute ulcer, with moderate hemorrhage. All were treated without operation.

Seven cases of chronic ulcers. Three of them were operated on to relieve pain, due to adhesion, with recovery and freedom from pain. No ulcer-site could be detected in either of these patients.

One case of ulcer caused from supposed ptomaine poison of four years' standing. There

were several slight hemorrhages at the time of poisoning. In the last case for two and one-half years there was constant pain in the region of the pylorus, which, at intervals during each day, became greatly exaggerated. Operation to break up adhesions revealed several large bands adherent to the pylorus, gall-bladder, and the under surface of the liver. Prompt recovery.

Two cases of chronic ulcer; one of ten years' standing, and the other of seven years' duration. No operation in either case.

Results: Deaths, one; complete freedom from pain, nine; marked improvement but only partial relief, four.

At present I have one ulcer patient in the hospital who is making slow but very satisfactory progress, although there are still slight but gradually decreasing hemorrhages.

Three years ago, out of seven patients treated, five of them submitted to gastro-enterostomy. Two of these died; the others were improved as far as the ulcer was concerned, but did not have the relief from pain they should have had. One was operated on six months later for a new ulcer. A recent letter from the husband of another says, Mrs. D. was compelled to undergo her third operation three months ago and died on the table.

In view of my former lack of success, I resorted to the more conservative treatment. The results are so much more pleasing to me and so much more satisfactory to the patient, that I feel justified in operation only as a very last resort or because of the extreme conditions before noted.

The treatment we now use is as follows:

1. Rest. The patient is put to bed for from ten to twenty days. All food and drink, except sterilized water, are entirely withheld during this period. After the enforced fast period, the patient is given hard dry toast, well salted and thoroughly masticated, red beef, only the juice being swallowed, milk, soft eggs, custards, and various broths. The diet is gradually increased, and at the same time the nutrient enemata are gradually withdrawn.

2. Drainage. As soon as the patient is placed in bed, calomel and sodium bicarbonate are given, gr. 1/40, for forty doses at intervals of fifteen minutes. Every four hours one dram of saline laxative is administered in as much water as the patient can take, and is continued until the last dose of calomel is given. Twelve hours after the first dose of calomel is given the bowels are flushed with a large high normal sa-

line enema, and this colon flushing is used every morning before any food is introduced into the rectum. Sixteen gms. of castor oil is given the evening of the second day. No more cathartic is given per os.

3. Diet. Stomach diet after the enforced starvation has already been noted. Rectal diet:

First day:	Gms.
Beef tea (strong).....	128.
HCl, dil. ....	.60
Glycerite pepsin	8.

Second day:

Milk, peptonized	96.
Claret	16.

Two eggs.

Third day:

Malted milk	96.
Cream, peptonized	32.

These enemata are given in rotation.

Strychnine, tincture of opium, spiritus frumenti, or other medicine is easily incorporated as the condition from day to day requires. The method employed is to give the enemata through a No. 17 colon-tube, inserted about six inches, at a very low pressure and occupying from fifteen to twenty minutes. The enemata are given four times daily. Every morning the colon is flushed with a large enema of normal saline solution.

Salt water sponge baths, at a temperature of 70° to 90°, are given night and morning, followed by gentle massage with oil. Every other day a thorough alcohol massage is administered. The teeth are thoroughly brushed several times daily, and the mouth frequently washed with some mild antiseptic solution. Pain is controlled by packs, sinapisms, opium per rectum, or morphine hypodermically. Internally, bismuth, milk of magnesia, lithium citrate, etc., are given per mouth as required during the time in bed.

Hemorrhage is treated by morphine and ice-packs. Absolute mental and physical rest is imperative. The room must be well aired all the time, and as much sunlight as possible admitted. Actinic rays, applied once daily over the painful area, assist greatly.

After the patient is up the diet is gradually increased, as is also the exercise. A general tonic is given and actinic rays continued or the x-ray used. The patient is advised to eat four or five very light meals daily for three months, gradually getting back to a regular diet, and is also advised to undergo three or four days' enforced rest-cure each month for six or eight months.

DISCUSSIONS OF THE PAPERS OF DRS. WALKER AND
OCHSNER

DR. F. W. CRAIN (Redfield): We have been highly entertained by Dr. Walker's paper and by Dr. Ochsner's excellent address. I do not know that I can add anything to what has been said upon the subject of gastric ulcer, the treatment, and the way of handling cases. I want to say, however, that the hemorrhages which sometimes follow apparently mild cases of ulcer of the stomach are frightful, and those of you who have been so fortunate as to escape these cases can hardly realize what a shock it gives to the patient, because some of these cases occasionally occur where the hemorrhage has been sufficient to endanger the health of the patient. I have had a few such cases in my own practice, which were equal to the worst case of post-partum hemorrhage I ever attended.

I think we cannot too much emphasize the rest-cure for the treatment of gastric ulcers; and in every disease of an ulcerated character the question of rest in the management of the case is of prime importance, not only rest by limiting the amount of diet and giving the kind of diet that taxes the digestive organs the least, but absolute rest to the patient, that he may reserve all the power he has, because every exercise, it makes no difference how slight, calls for a certain amount of physical energy that must be replaced by food, and as the stomach is the port through which the food is passed and taken into the system, digested and prepared for assimilation, it is quite necessary you should give the patient as much rest as possible, not only bodily rest, but rest for the stomach and rest for the mind. It is of prime importance that we should look well to the stomach, because when the stomach is deranged the whole system suffers as a result.

DR. S. A. BROWN (Sioux Falls): My own experience has led me to consider one important point in regard to ulceration of the stomach. It is, that it is almost always accompanied by anemia and emaciation. Another fact is, that rectal feeding, which has been mentioned by Dr. Walker, is very poor feeding. I do not say that we can get no nourishment from it, but I think it is a good plan, when considering the length of time of resting the stomach, that we should consider that we cannot depend very much on the nourishment it gets from the rectum, and that the starvation-time should not run much further than we think the patient could live upon nothing; that is, if we give him very much starvation and he is pretty near dead, we soon have him dead, notwithstanding the fact we are feeding him rectally four or five times a day.

I will mention a curious case I saw yesterday. The patient had suffered from the stomach for many years, she told me. I saw her only yesterday, but from what her complaints were, I was satisfied she had ulcer of the stomach a good deal of the time. It had been followed by a very serious nervous condition, which produced cessation of movement in her lower limbs. She could not walk straight. It was not complete locomotor ataxia, but very marked loss of control over the lower limbs, and from the history I gathered—I had a long talk with her—it would take a good deal to convince me that her trouble did not result from the condition of the stomach.

DR. H. J. ROCK (Aberdeen): I have been in the

practice of medicine eight years, and in these eight years I have done some little work. The work that I have done upon the stomach I am particularly gratified with, but the work that I have done on the stomach is zero—it is a negative exponent compared with the positive exponent of the work of the gentleman you have just listened to. Fourteen cases sum up my experience. Probably fourteen hundred or fourteen thousand would sum up his. I can say to you this, that when the great men of our profession have not thoroughly agreed upon how and when to do this thing, you will pardon me if I make mistakes when to act and when not to act, and you will be pardoned equally when you have not acted timely. Four of the fourteen cases I have had to do with were a good deal like a great many appendicitis cases that come to you and me and everybody; they were very nearly ready to die when they came to me, but I had the desire and the courage to try to relieve them, and I succeeded in relieving them probably for two or three days, and then they succeeded in leaving me, which made my death-rate kind of staggering, and it took a good deal of enthusiasm out of me. But I was not actually the cause of their death, and I knew I could not trace their death to any act of mine, and figuring the thing all out, I decided there is a very opportune time to operate upon cancers of the stomach and duodenum. When cancers are thoroughly developed in the blood, and the patient is thoroughly racked, physically and mentally, these are the people you want to let alone, and are cases you want to put upon a rest-cure and that kind of thing. Acting on that experience, I have adopted this plan: To get these people to raise their body-weight, and in raising their body-weight I use the malt extracts, olive oil (California olive oil), and in every conceivable way I can add to their body-weight I do so. One woman in particular I remember: I raised her body-weight eighteen pounds in five weeks, and she resisted beautifully and recovered beautifully.

Another case comes up, and I am very glad to see the doctor here who saw the case. Often before I see the case, the question of hemorrhage comes up. A patient called at my office one afternoon. I had told him several times I was strongly of the opinion he had an ulcer of the stomach. I said to him on that occasion that I was of the opinion that he also had an ulcer of the duodenum, and he wanted to know what the treatment was. I told him, and we started out. That evening his wife called me, and she said her husband was very sick. Just as I approached the house he lay on the sofa and had a terrific hemorrhage from the stomach. I do not know how much liquid there was in the stomach—gastric juice or stomach-contents—but there was fully one-third of a wooden pail full of blood and debris from the stomach-contents. I controlled the hemorrhage as best I could with what means I had at hand, and that evening, at 9 o'clock, he developed another hemorrhage, still more terrific, and showed mental depression. He was absolutely unable to stand, or to turn himself over, and there was great loss of blood. I had been taught all the time that operation for hemorrhage of the stomach was not the thing to do, and therefore I followed my teachings and did not operate. They took him to the hospital, and that night he developed another hemorrhage. The next morning early we operated on him, and he was just alive from great loss of blood.

This was, I think, on Tuesday morning. We found that he had a large gastric ulcer just riding over the end of the stomach; and just below, about an inch and a half on the duodenum, was a still larger ulcer that was swollen and red, inflamed looking, and angry, completely obliterating the stomach. A gastro-enterostomy was readily performed. He was put into bed and put in the condition the doctor spoke of. Nineteen hours after the operation small quantities of warm liquid were given him, a teaspoonful every few minutes, and he got along nicely. On Friday evening I was called to see him. He was feeling nicely, and said he felt like going to sleep. I replied that I would wait and see him before leaving the hospital again. He went to sleep, and waked up in a few minutes, probably in a half or three-quarters of an hour. He called the nurse and said he was just starving for something to drink. That night at 3 o'clock he developed another one of these sleepy conditions, with another loss of blood, and at 6 o'clock in the morning he was dead. The remaining blood in his body was in the bowel. He had completely bled to death from this condition.

I want to say that is the only experience I have to give you, but I feel this, if I had taken this man, one of the most popular men in our city and well liked by the great company that had employed him for a number of years, in time, I could have saved his life. I really believe. My experience is this: that it was justifiable to operate, but he met his death, which was due to hemorrhage of the gastric ulcer and duodenal ulcer. When we opened the stomach the first hemorrhage, on Monday afternoon and night, was from the stomach. You could see that, and he had no more hemorrhage from that, but on Friday evening he developed the duodenal hemorrhage from which he died.

DR. WM. JEPSON (Sioux City, Iowa): I am quite sure that there is very little, if anything, that I can add to that which has already been said upon this subject by Dr. Ochsner. It is possible, in the few moments allotted to me, to emphasize some points that he has brought out, and possible also to say a word or two relative to duodenal ulcers, to which time prevented him from alluding and to which Dr. Rock did allude, but I did not quite hear his remarks.

I think the majority of my hearers will agree with me that it is indeed a good sign to observe, or rather to have pointed out to us, that we must not look upon every gastric and duodenal ulcer as one demanding operative interference, and when that time comes it will mean that one out of every twenty-eight or thirty will not represent the percentage of gastro-enterostomies upon cases applying for hospital treatment.

I think we all realize that gastric and duodenal ulcers are possessed of an etiology, which, if it is not entirely clear to us, at least the cause is not always easily removed, but if removable, our first effort should be to remove it, and not that of attempting to bring about an operative interference, that is, by gastro-enterostomy or excision. I believe that the medical man, or the man who prescribes for a patient intelligently—and when I now say "prescribes" I do not mean it is necessary to give a great amount of this drug or that drug, but if the patient has directions laid down as to means of feeding himself or being fed, and quietude, etc., not only for the time being, but subsequently, so when the ulcer is healed that it may be pre-

vented from recurrence, I believe that man has done just as much good for that patient as I or anyone else could have done had we opened the abdomen and excised the ulcer, in the early stage perhaps when that is not removed.

Personally, I cannot help believing that gastric ulcer represents, grossly stating it, at least two stages, one of which is that stage of incipency when the cause is yet active, when I do not believe operative interference is called for, except it be for perforation and possibly hemorrhage. If, on the other hand, such an ulcer has been permitted to continue unhealed until it becomes a chronic ulcer with a hard, indurated base, as has been so aptly described by Dr. Walker, such an ulcer may possibly be susceptible of being remedied only through operative interference; and, speaking of operative interference in such cases, I believe that excision, when possible, at least that is my own personal view of the matter, will have preference over that of gastro-enterostomy.

That brings up another question in this connection, and that is one as regards the matter of the development of carcinoma in an ulcerated area. I am quite sure, at least I think many of us will agree, that we are not able to differentiate a simple, chronic ulcer without carcinoma from the one that has incipient carcinoma developing in it, prior to operative interference. And that is not all. At the time the stomach is exposed to inspection, we often find it quite impossible, and only a microscopical examination reveals to us the exact and true facts. I do think, furthermore, that where evidence, such as we accept as indicating the presence of a gastric ulcer in an individual of advanced years, say, along thirty-eight or forty or after that period, is present, that that case actually demands operative interference more than at an earlier period, because of the tendency to carcinoma occurring from that time on.

Just one word more regarding the duodenal ulcer, which Dr. Ochsner did not have time to refer to. We all recognize that the transverse portion of the duodenum, as well as the vertical portion above the point where the ampulla of Vater enters, is very prone to development of duodenal ulcers. In fact, pathologically, it may be looked upon as a part and continuation of the stomach, because here we have those same agents acting, possibly, that we have in the stomach. Of course, from there on, by reason of the digestive products poured into the duodenum, we have the chemical contents changed.

Fortunately, duodenal ulcers are comparatively rare. I believe it is a well understood fact that such ulcers are oftentimes void of those clinical symptoms which we would like to have present in order to indicate to us their presence, *i. e.*, the absence oftentimes of marked pain. This is probably due, in a sense, at least, to the fact that that portion of the duodenum from the pylorus on over to where the fourth portion passes underneath the ligament to become the jejunum, is a fixed part of the intestinal tract, probably a portion of the intestinal tract which differs from the rest of it, excepting the rectum, in the sense that it is not possessed of marked peristalsis, this being the mixing chamber in which the digestive fluids mix with the contents of the stomach, the propulsion of the contents being dependant upon the gastric motility, or force of the fluid as it is carried into the duodenum. This probably accounts for the fact that such ulcers are

oftentimes without symptoms.

DR. VAN BUREN KNOTT (Sioux City, Iowa): In considering this question, it seems to me, in the first place, there comes up the question of the differential diagnosis between some of the complications of the upper right portion of the abdomen. The condition with which gastric ulcer is most likely to be confused is that of gall-stones or some disease of the gall-bladder. I shall not attempt to go into the differential diagnosis in those two conditions minutely, but simply to state one condition which exists, and which will enable us, in a great majority of cases, to make an accurate diagnosis, and that is that in the case of ulcer, either of the pyloric end of the stomach or the duodenum, we find what has been well expressed by Harris as a continuity of symptoms. In other words, the symptom of gastric disturbance or pain in the upper abdomen is more or less constant, while in the diseases involving the gall-bladder we find an interruption of the symptom, and the patient may go on for weeks or months having no particular disturbance of any kind whatever, and then be suddenly involved with a serious attack. And it seems to me this one thing is of the greatest importance in making a differential diagnosis. The differential diagnosis is of importance, because, I am firmly of the opinion, when well-defined disease of the gall-bladder or ducts has been diagnosed, operation should be done as soon as possible, and the sooner the better. On the other hand, I wish to agree with Dr. Walker, and also with Dr. Ochsner, each of whom, I think, made a very fair representation of the subject to-day, Dr. Walker stating the case very fairly from the medical side and Dr. Ochsner very fairly from the surgical side, that those cases of gastric or duodenal ulcer should be subjected for some considerable period to well-defined and well-regulated medicinal treatment, and, if this appears unavailing and the patient does not in any manner or condition improve, then he should be subjected to surgery. I believe that that was the stand advocated by them both.

Now, there are certain conditions complicating the existence of gastric ulcer, which demand operation. It is a fact, accepted by medical men, as well as by surgeons, that most acute cases of gastric ulcer will recover after being so treated medicinally. It is a well-recognized fact that many cases of acute gastric ulcer will recover after being so treated. It is a well-recognized fact that the large majority of cases of chronic gastric ulcer will not recover until subjected to surgery. Complications arising in the course of acute gastric ulcer which demand immediate surgical treatment are hemorrhage or perforations. The complications arising in the course of chronic gastric ulcer which demand surgery are hemorrhage, perforation, gastric adhesions, the adhesions of the stomach to the abdominal wall or neighboring viscera, or obstructions of the pylorus. These four conditions in chronic ulcer, and those I have already previously mentioned in acute ulcer, are absolute indications for operation, and there need be no particular argument about how to treat those cases. Any man within the sound of my voice is able to give a diagnosis of any one of the conditions mentioned. If he has an acute ulcer which is exposing the patient to severe recurring distress or hemorrhage, that patient should be operated upon. If he has a patient with acute ulcer which is perforated,

that patient should be operated upon immediately, and, as Dr. Ochsner has told us, these cases of acute ulcer, if operated upon within the first few hours after perforation, will practically all recover, and the longer the delay before operation the higher the mortality-rate.

Upon the other hand, with the chronic ulcer the existence of particular gastric adhesions can be diagnosed. It is not necessary to go into details. You are familiar with the existence of the chronic ulcer. Pyloric obstruction can be diagnosed. And it seems to me that in these cases of gastric ulcer we have now, by the experience of men in years gone by, established lines that are well defined, and that the treatment of these cases is no longer in obscurity, and it is no longer up in the air. We know just about what we should do for them.

And now, as far as the operative procedure upon the stomach is concerned, Dr. Ochsner and Dr. Andrews, another gentleman of experience in stomach surgery, I think will agree with me that gastro-enterostomy is practically a minor operation. It is one of the simplest procedures any man is called upon to perform. The mortality-rate is extremely low, and the result very good. Gastro-enterostomy, however, does not suffice for all cases, and this brings up the question of differential diagnosis. Frequently before the abdomen is opened we are called upon to decide whether the patient has a malignant neoplasm obstructing the pylorus or a benign neoplasm obstructing the pylorus. In many of these cases I am absolutely unable to make a diagnosis before operation, I am willing to say, and I am also willing to admit that after the abdomen is opened and the neoplasm is in view, I am in many cases unable to determine whether the growth obstructing the pylorus is benign or malignant. Illustrating this point, I would like to quote Finney of Baltimore, whom I heard three or four months ago make the statement that in two cases after the abdomen was opened he was unable to determine whether the growth obstructing the pylorus was benign, due to inflammation from an ulcer, or carcinomatous; and after he had taken a cut section from the growth, and had frozen it and made a report upon it, the microscopist was unable to tell, and it was only after he had made a radical operation and the growth has been subjected to many inspections under the microscope, at the leisure of the pathologist, that the true nature of the neoplasm was determined. This is the most forcible illustration of the difficulty of making this diagnosis that I have ever heard. However, it seems to me the importance of making this diagnosis absolutely is not so great. We know from the experience of men who are doing gastric surgery in large quantities that the tendency for the implantation of carcinoma upon ulcer is extreme; in fact, statistics prove that over 50 per cent of cases of cancer of the stomach have been preceded by ordinary ulcer. If this is true, and we are confronted with a condition in which the differential diagnosis between ulcer and cancer appears to be perfectly clear, it seems to me our duty is to make an excision of the suspicious area or perform a pylorotomy. In the hands of an experienced surgeon, and if the pylorus is excised and with it all the suspicious tissue, the future of the patient is much better usually, and not only his recovery from the immediate operation, but

his prospects of deliverance from recurrence of the trouble are very much greater than they would be by simple gastro-enterostomy.

As Dr. Ochsner stated, there is no particular danger of shock. Now, in a gastro-enterostomy it takes only from twelve to fifteen minutes, the handling simply of the stomach and the upper part of the jejunum. There is no opportunity for shock or no particular exposure of the abdominal viscera; and, as I said a while ago, gastro-enterostomy may be considered a minor operation. Pylorotomy must be considered a little bit more severe with a mortality-rate a little bit higher, but it is not a very serious operation, and in those cases which meet the indications, it seems to me the operations should not be too-long deferred, at least in those cases where it is absolutely well indicated. But I do not wish to be understood as advocating operations in acute ulcer or cases which have not been given an opportunity to recover through medicinal treatment.

DR. H. J. G. KOOPS (Scotland): Since this subject is one that interests all of us, not only surgeons but general practitioners, I think it is only right that the general practitioner should have a little something to say on it. We have heard only from surgeons so far, practically, except the second paper, and I regret also that not more has been said about the diagnosis of this trouble. We used to think, or at least I thought, that, in order to make a diagnosis of gastric ulcer or duodenal ulcer, it was necessary to have hyperacidity and hematemesis. That is not necessary. We may have gastric ulcer when there is no hyperacidity and when there is no apparent hemorrhage. I say *apparent* hemorrhage, because there is almost invariably hemorrhage, but it is not always detected by the eye. Invariably there is hemorrhage in one way or the other, and it may be detected by proper examination of the feces. If we do not find it in one examination, let us make several. We shall perhaps find it in some way at one time or another, and in this, as in all other troubles, let us be sure of our diagnosis before going ahead with treatment.

From what experience I have had with this trouble, I am convinced, and I am glad to say the surgeons have expressed themselves so, that the uncomplicated gastric ulcer is a medicinal disease. It is amenable to medical treatment, and in almost all cases a cure is accomplished. There is no doubt but that some of these cases relapse, perhaps because of improper treatment or improper care succeeding it, and that is true of surgical cases. The fact that recurrences and complications follow, of course we shall have to establish at the time when they do occur, and if there is a cohesion of the pylorus or large dilatation of the stomach, no doubt the best procedure is surgical procedure. In the medical treatment I think, as I believe Dr. Ochsner has mentioned, that Dr. Fütterer has done a great work in establishing the fact that anemia is an underlying factor in almost all cases. As you well know, we get most of our gastric ulcers in young women, and by overcoming the anemia the ulcer is overcome. Dr. Fütterer's statement is that he precedes the beef-juice treatment by a period of rest for a week or so, providing the patient's condition admits of it, but he feeds the beef-juice to the stomach in large quantities and with good results.

DR. E. WYLLIS ANDREWS (Chicago): These papers, and the discussion which followed, have been marked with, to me, unusual interest, because so well balanced and showing such discretion and judgment.

It is perfectly true that gastric ulcer is not a surgical disease until it has been through the hands of the internist. Perforated gastric ulcer calls for an immediate operation. Bleeding gastric ulcer—and this is no more than was laid down in the German Surgical Congress as long ago as 1899, and we have not improved on their method since—is not an indication for an operation, except in certain cases. A single large hemorrhage is not an indication for operation, but if the patient bleeds a little and it be repeated continuously, unless relieved by operation he will die. If persistent small hemorrhages, as related in one of the cases to-day, come on and are not detected in the feces, or if persistent hemorrhages come on with vomiting and are not stopped, that patient will die unless relieved by operation.

No one has said anything to-day about one of the most interesting developments on the subject of gastric and duodenal ulcers, which has just been revised by Moynihan, and, I think, confirmed by the experience of all of us, a differentiation for location of the ulcer by symptoms only. We have a clinical picture which has never yet in a number of cases, and I have had a dozen cases the last year, failed us in differentiating an ulcer below the pylorus from an ulcer above the pylorus; and when I say this I know some of these internists are ready to jump up instantly and dispute it, but, as we have ourselves confirmed, we are ready to point out, before we put the patient on the table, from the symptoms only, which cases give us a duodenal ulcer and which a gastric. The picture which I speak of is that of the individual who has two and a half hours after a meal, a sudden access of pain, the peculiar boring and burning pain familiar to all who have seen an ulcer patient, or if a patient doing fairly well goes to bed and wakes up in the night with that same sort of hot, burning pain, that patient, without any failure in at least a dozen cases, we have found to have the ulcer below the pylorus or at the pylorus, when we operate upon him. I say this because it has been a matter of controversy, and some of the internists have denied it, and other surgeons of the Cook County Hospital took the matter up also in a controversial sort of way, and we were ready on our side to show them that it was true, that the ulcer was where I say it is. In one of the last of those I operated upon a month or so ago, I had exactly the last picture I spoke of, of the pylorus so thickened by long-continued, large patches of ulcer, which of course produced corresponding patches upon the peritoneum, that I was in doubt as to whether or not it had become malignant, and I am yet in doubt, and have been troubled in my mind since, whether I did right or wrong in doing a gastro-enterostomy instead of a pylorotomy, and I was especially in doubt because Dr. Sippy was disposed to criticise, as he had made a positive diagnosis of cancer Rodman's operation should perhaps be the term applied to that excision of the duodenum which the last speaker spoke of, an excision of the pyloric end of the stomach for ulcers, for fear it may become malignant or is already malignant.

DR. R. H. GOODRICH (Chamberlain): I consider the subject under discussion very important, and I hold Dr. Knott in very high esteem, as well as Dr. Ochsner and others who have taken part in this discussion, but I should think if I performed this operation that I had done a major operation. I do not think it would be well for us to go home, or for these gentlemen to go home, and do this kind of minor surgery, for they might make a mistake and charge minor-surgery prices. I say that would interfere with the great work they are doing in the cities, so we shall have to charge for a major operation.

DR. WALKER (Essayist): I believe I have nothing to add, yet there is one thing I think ought to be emphasized in these cases, and that is that but few cases should ever be allowed to go to the surgeon; that is, the general practitioner ought to recognize the importance of this subject and ought to be able to make some diagnosis early in the disease. I believe that most all of these cases have to be of long-standing before they get so bad that they have to have special treatment instantly. In my city we have a great many stomach cases coming there for treatment by the waters,

thinking that the waters are going to benefit their stomachs. It is our habit there to put immediately all the stomach cases into the hospital, and treat them by rest, stomach rest, and rectal dietation. Whether that is going to become a hobby with us or not I do not know, but we are getting good results, and I believe we are going to be able to keep a great many people from the operating-table on that account. I wish to give way to Dr. Ochsner.

DR. OCHSNER (Essayist): I wish to thank the gentlemen who have discussed these two papers, and especially again to emphasize what Dr. Walker has just stated. If you cure a stomach ulcer by dietetic and hygienic measures, you get a very much better machine than you do if you let that condition get so bad that you have to cure it by a surgical method. So I just wish to emphasize once more that the way to do that is to get that ulcer to heal, and then terrorize the patient continually—don't let up on him and don't let him go back to the bad hygiene and to the bad dietetic procedures which primarily caused the ulcerated condition.

The other points I might make would repeat those in the printed report, and that I wish to avoid.

THE EARLY TREATMENT OF CERTAIN INJURIES TO THE EYE*

By JOHN M. ROBINSON, M. D.

DULUTH

Of all ocular injuries the most common is the superficial embedding of small foreign bodies in the cornea; and while it is true that this structure when so wounded shows considerable resisting power against infection, it is equally true that when infection does occur the results are apt to prove serious.

On a Saturday afternoon a butcher consulted me on account of severe pain in the eye. The evening before, a physician had scraped away a small particle that had become adherent to the cornea a few hours previously. On examination I found, as the only evidence of injury, a slight abrasion of the epithelium near the nasal limbus, where the foreign body had been removed; but there was now a beginning iritis; the aqueous was cloudy and the conjunctiva edematous. By Sunday morning the lids had become so swollen that it was with difficulty that the globe could be inspected. A panophthalmitis was present. Two weeks later what little was left of the organ was removed.

The patient, having learned something of the value of sterilizing procedures while in the hospital, claimed later that when the foreign body

had been removed, the "needle" was not cleansed or boiled, and on this ground threatened action against the physician for damages. It was explained to him, however, that it was more likely that the infection had occurred in his own butcher-shop than in the doctor's office, which presumption, may we hope, was well founded.

My colleague, Dr. Conkey, in reporting 300 cases of foreign bodies in the cornea, has rarely seen ill results follow the awkward and unclean attempts of fellow workmen at removing the embedded particles, but he has had two or three cases of severe infection following the removal of foreign bodies by physicians who had failed to sterilize their instruments.¹ Yet it is not only the instruments, but, as well, the various solutions, that need always to be boiled. It is my custom to have ready, prepared in test-tubes, sterilized solutions of boric acid, normal salt solution, four per cent cocaine or four per cent alypin and one per cent atropin. These "canned goods" are kept tightly corked and are thus ready for another boiling before every little operation, no matter how trifling. By sterilizing in test-tubes the solutions can be quickly cooled, without contamination, by plunging them in cold water. Warm solutions are more agreeable to the pa-

*Read at the 40th annual meeting of the Minnesota State Medical Association, held at St. Paul, October 6 and 7, 1908.

tient and more effective in cleansing the eye. Boric acid is so feebly antiseptic that it is much better to insure the matter by boiling. Cocain appears to lose about ten per cent of its anesthetic property on each sterilization, but the unsterilized solutions that stand in the office or hospital are anything but suitable to drop into a wounded eye. Alypin has the advantage that it can be boiled without deterioration. It is probably less toxic, does not dilate the pupil, and, what is more important, especially in dealing with the cornea, it does not produce such drying of the epithelium as does cocain. Prolonged boiling will alter atropin, but important as its use is in most wounds involving the iris, it is better to omit it in the first treatment of a wounded eye than to use a solution of doubtful cleanliness. It is hardly necessary to add that the suspicious little medicine-dropper—more frequently at hand than the more elegant glass undine—always needs extra sterilization.

In the early treatment of penetrating wounds, which show themselves less by pain than by intra-ocular hemorrhage, disturbance of vision or decreased tension, it seems much better to depend upon a thorough flushing of the whole conjunctiva with warm boric acid or normal salt solution than to hope for benefit from any of the antiseptics that are sometimes used. It is a cardinal rule in the treatment of ocular wounds to avoid anything that will cause irritation. Mercuric bichlorid, in anything stronger than 1 to 5,000, will usually irritate; in weaker strength its value as an antiseptic, in the small quantities that can be here used, must be very doubtful.

As ocular antiseptics the organic compounds of silver have been much extolled. Protargol is too irritating to use in wounds of the eye. Argylol for three or four years was much lauded by many celebrated clinicians; but recent reports from the laboratory show that there, at least, argylol has little or no power as a germ-destroyer.¹² It may be that it grew in favor only because it is bland and unirritating and impressively dark-brown in color. We may, at any rate in the treatment of penetrating wounds, more safely regard it as innocuous and inert than depend upon it as an antiseptic. I have used nargol with what appeared to be good results, and find it comparatively unirritating; but my experience with it is not large enough to warrant a recommendation.

Where there is an open wound of the globe, and a septic condition is already present or threatening, Haab recommends that iodoform

rods be inserted into the interior of the eye, while Maitland Ramsey has discs prepared of collargol and gelatine, which are applied to the edges of the wound. Since these preparations will hardly be at hand in emergencies, it will suffice to dust the wound with finely powdered sterilized iodoform or boric acid. If the cornea has been widely opened the anterior chamber may be gently flushed with normal salt solution. If it is a small puncture made by a dirty or rusty implement, a slightly radical but worthy procedure is to cauterize the wound lightly with the point of a common knitting-needle. When the iris is prolapsed it should be gently drawn out and cut off close to the wound. It is important that this be done promptly, since a protruding piece soon becomes incarcerated. The prolapsed iris appears as a small bluish-black bead protruding from the wound, and after it has been excised its edges should be gently pushed back into the anterior chamber with a probe or a small spatula. It is difficult and usually useless to attempt to stitch a scleral wound, but the conjunctiva may be loosened from the sclera and drawn together with a couple of fine stitches, so that the wound may be covered.

The toilet is completed by cleansing the face, especially the eyebrows and eyelids, with soap and hot water, applying an antiseptic compress, or, what I prefer, an ointment of camphor and aristo! in sterile vaselin, and applying a bandage that does not press too firmly upon the globe, and then put the patient to bed.

To anticipate the occurrence of traumatic iritis, certain of the French school have advocated the early exhibition of mercury by inunction, while Dr. Gifford of Omaha some time ago advised large doses of sodium salicylate. When the globe has been struck by a flying piece of glass, stone, or metal, even if no foreign body can be made out, it is wise to suspect that something may be hidden behind the iris or concealed by hemorrhage. The path of entrance has often a way of closing mysteriously, and both patient and surgeon may labor under the error that nothing has entered the eye; therefore as early as possible a skiagraph should be taken in all doubtful cases. Even if the x-ray operator has not the apparatus or skill to accurately localize the foreign body, the mere determination of its absence or presence is of much importance, not only in the matter of prognosis, but in the early treatment. If the fragment is iron or steel, the magnet is called for and promptly, since the extraction of a foreign body is more difficult after

it has become adherent in the products of inflammation or in a coagulating blood-clot. Except the particle of iron be free and easily seen, the hand-magnet is of little use, and even the giant magnet often fails to dislodge a firmly embedded piece of steel.

I have an apparatus which is constructed after the original design now successfully used in the eye clinic in Basle, Switzerland, and described by its inventor, Prof. Mallenger, as an "inner-pole" magnet. It consists of a heavy coil that surrounds the patient's head, the eye thus being in the center of the open space, where it can be readily kept under close observation during the operation. A 500-volt current is put through the coil, and any steel instruments that are brought to the eye become themselves strong magnets. While the inner-pole magnet has not the pulling power of the large Haab instrument, it is more easily controlled and more convenient, besides having a wider range of usefulness.

A comparatively common form of injury is that resulting from dynamite or powder explosion. In the former the cornea is frequently peppered with sand or fine bits of stone. The particles that are imbedded in the conjunctiva are of less importance, and are easiest removed by cutting them loose with a pair of small scissors, while those in the cornea that are readily seen should be removed with a spud, or lance-shaped needle, at the first dressing. But in those cases where the particles are numerous it seems best not to subject the cornea to an extensive picking process. I have removed some of these minute fragments six or eight weeks after the time of the injury. By that time they had become, in several cases, loosened, and the corneæ did not seem to have suffered much from the long retention of the foreign bodies. One suspects that too much of the needle or spud during the first day or two may rather invite sepsis and encourage the formation of opacities. During the past two years I have had an opportunity of observing eighteen of these cases, and in no instance has corneal ulceration resulted. The eye is usually lost after a severe dynamite injury. Especially in the early handling of those cases, which at first do not seem to be very serious, should the x-ray be resorted to, since one or two very small fragments of rock may be driven through the cornea near the limbus, and later slowly develop iritis with the insidious risk of sympathetic inflammation.

Where the cornea has been peppered with powder from the toy-cannon or the iniquitous

firecracker, hydrogen peroxid has been recommended for the purpose of loosening the imbedded powder grains. Even when cocain is used the peroxid causes much smarting; and, more than this, the gas bubbles, starting from the abraded point, work under the epithelium, producing a temporary opacity that is likely to cause some apprehension when first seen. The epithelium does not, however, appear to be seriously damaged thereby. In order to determine whether the use of peroxid is of material advantage in removing powder grains or fine fragments of stone, I exploded gun-powder into the corneæ of a number of freshly extracted pigs' eyes, and compared the results in removing the grains with and without the use of the agent mentioned. In this experiment little seemed to be gained by the use of hydrogen peroxid, while that little was as well accomplished by a 50 per cent dilution, which is less painful than the full-strength solution. It is well to neutralize with bicarbonate of soda if the peroxid shows any acidity. It will quite suffice, in place of dropping the solution on the cornea, to dip the spud in it; the little which remains on the point of the instrument will do the work.

Burns of the conjunctiva, including the action of quicklime, strong acids, and other corrosives, afford, more than other injuries, an indication in the relief of pain. Cocain may be necessary in order to make a complete examination of the eye, but its anesthetic effect soon passes off, and to continually repeat it in strong solution endangers the corneal epithelium. If repeated instillations seem necessary, alypin is to be preferred. In these cases, also, oils have an advantage over watery solutions, in that they are more soothing and remain longer in contact with the conjunctiva. Further than this, oils tend to keep apart contiguous raw surfaces, which are likely to heal together with resulting deformity.

For the relief of pain after a burn 5 per cent chloretone in castor oil is an excellent remedy. If the burn is deep, iodiform may be added to good advantage. Atropin may help slightly to relieve the pain, but its indication is not as clear here as in certain other injuries. Further, in deep burns there is often a tendency to glaucoma, for which reason it is better to omit the atropin in the first day or two of the treatment. In using cocain, atropin, etc., it is well to recall that the pure alkaloids, and not their salts, are soluble in oils. But previously dissolved in a little water, the alkaloidal salts may, however, be mixed in vaselin.

Recently there has been recommended as a means of producing prolonged anesthesia of the conjunctiva a 1 per cent oily solution of aconin. I have used this in a case where both eyes were scalded with steaming lye, with what seemed to be excellent results.

For the first few hours after a burn iced applications may somewhat serve to relieve the pain and irritation, but by the second day heat will usually be found to be more agreeable, as well as much safer, on account of the danger of corneal ulceration. Indeed, this applies to most ocular injuries,—cold for the first few hours only.

In the case of quicklime, the severity of the burn is partly due to the fact that the caustic particles become imprisoned, and pressed down on the eyeball by the spasmodic closure of the lids, which arises from the violent irritation. The flow of tears not only fails to wash out the lime which adheres to the conjunctiva, but helps to slack that portion which may be still unslacked, while the heat thus evolved adds to the work of destruction. Weakened vinegar poured into the eye may neutralize some of the alkali, but if too strong it only adds to the pain and smarting. Solutions of sugar have been recommended on the theory that thereby the lime is rendered more soluble, a condition which we wish to avoid rather than encourage. The chief thing is to get rid of the caustic particles as quickly and as thoroughly as possible. To this end all parts of the conjunctiva should be flushed with water, or with milk, if that be at hand, and the pieces of adhering lime gently wiped out with

a soft piece of linen dipped in oil. For this procedure preliminary cocainization is recommended, but I would go further than that and advise prompt resort to general anesthesia, in order that the spasm of the lids may be entirely overcome and the particles of lime that usually adhere tightly in the upper fornix may be completely removed. About a year ago I had two cases of this unfortunate kind under treatment at one time. In one the eye had been carefully flushed out by the physician who first saw the case, but twenty-four hours later the child was put under ether and two or three small pieces of mortar loosened from the upper cul-de-sac. The other was a nervous and refractory youngster whose conjunctiva was douched as well as it could be after cocain had been used. The everted upper lid was held back by a retractor while the fornix was explored with an oiled probe; yet a day later two small fragments of lime, which all of this manipulation had failed to loosen, came away in a flood of tears.

An oily solution of chloretone, as mentioned above, is valuable in the further treatment of these cases. It may be suspected that cocain, by drying the epithelium and increasing the absorptive power of the cornea, may tend to further the deposit of albuminate of calcium, to which most of the dense white opacity of the cornea after lime burns is due.

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CONGENITAL CYANOSIS OR BLUE BABY*

By O. A. OREDSON, M. D.

DULUTH

Children may be born with many different heart-lesions, such as defects or non-closure of the foramen ovale, defects in the ductus arteriosus, defects in the ventricular septum, or lesions of the pulmonary orifice. Of these defects, premature birth seems to be the etiological factor. Cyanosis occurs in nearly all these cases and is so pronounced a feature of congenital heart-disease as to give the name "blue disease" or, as more commonly called, "blue baby."

The discoloration or blueness occurs early,

usually the first week. It may be general or it may be confined only to the lips, nose, ears, fingers and toes. In some cases, and as is exemplified in the case before us, the entire body surface becomes almost purple. The discoloration varies very much at different intervals. It is always more pronounced on exertion. Owing to a deficient blood supply to the skin, we find the surface is always cold, while inside the temperature is normal. It does not require much exertion before he gets short of breath, which is usually accompanied by a slight cough.

These children seldom thrive well, and they are nearly always deformed, and dentition is

*Read at the 40th annual meeting of the Minnesota State Medical Association, held at St. Paul, October 6 and 7, 1908.

slow. The child before us seems, however, to be an exception to this rule, because he is quite alert both as to mind and body. The fingers and toes are enlarged or clubbed to a most marked degree. (Of this you have a most marked example before you.)

It has been estimated that of the various congenital heart-lesions closure of the pulmonary orifice and non-closure or patency of the foramen ovale are the defects most frequently associated with cyanosis and that deficiency in aëration of the blood, due to lessened lung function, is the most important factor.

Diagnosis.—Cyanosis alone is not a sufficient sign to make a diagnosis of congenital lesion of the heart. Every child born is more or less cyanosed, owing to compression of the umbilical cord, especially if the placenta is prematurely removed, or it may be somewhat choked with mucus or slime, and thus be cyanosed. Of course, if that is the case, it will clear up when the child breathes or cries. If after the child breathes cyanosis still continues, it depends on malformation of the heart or some abnormal occlusion of lung. The cyanosis due to cardiac trouble shows hurried respiration, while lung trouble shows little if any expansion of the chest.

Prognosis.—The prognosis is not good. Usually some other disease carries these children away. Of course, the prognosis depends on the degree of abnormality.

Etiology.—Peacock divides heart-lesions into three classes:

1. Those that occur early, 4 to 6 weeks, showing a heart with two or three cavities with an imperfectly divided arterial trunk.

2. Arrests occur at 6 to 12 weeks, showing imperfect auricular or ventricular septa, vessels misplaced or imperfect.

3. Defects occur after 12 weeks, showing abnormalities of the valves, persistency of fetal opening, etc. As I said before, heredity and premature birth are etiological factors.

Treatment.—A great many abnormalities are not incompatible with life; therefore, fortify the heart so that it may compensate for the defect. The child should be kept warm and well clothed. The heart may be strengthened by graduated exercise, to be well graded, however. The children who continue to thrive should be taught early the importance of self-control and the almost absolute necessity of a cheerful temperament. Sudden attacks of palpitation may be reduced by cold application to the chest.

Nervous excitement should be guarded against, and if it occurs it may be subdued by

bromides. The heart may be sustained by such stimulants as strychnine, tr. nucis vomicæ, digitalis, etc.

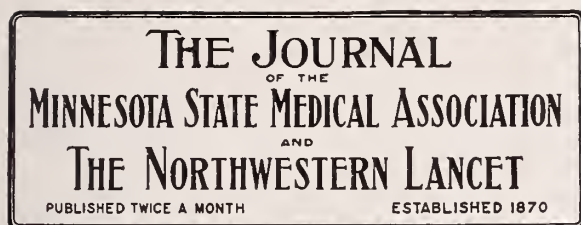
Constipation should be regulated, best by mineral waters. The diet should be carefully guarded, as an over-indulgence is quickly followed by bad symptoms. Frequent baths are of value in supporting the heart through nerves of the skin. Fresh air is necessary to feed the blood and supply the tissues.

Thus by carefully guarding every detail of life, even in the face of such a congenital defect, life may be prolonged to fifty years, according to the American Cyclopedia of Medicine.

THE RELATION OF TUBERCULOUS COWS TO TUBERCULOSIS IN CHILDREN

William Leland Stowell, of New York, describes the results of the feeding of the children of some of the wards of the City Hospital for Children on Ward's Island, on milk from a city herd that was afterward ascertained to be tuberculous. The herd was tested and all the animals in it had to be killed as the test showed some degree of tuberculous infection in all. All the children who had been fed on this milk were tested by the ophthalmo-reaction, seventy-seven in all. Of these nineteen reacted; thirteen were surgical cases of tuberculosis; three were not suspected of tuberculosis. The author concludes that fresh, clean milk is more wholesome than pasteurized milk. The danger of infection from tuberculous milk is very slight. Less than ten per cent mortality in the whole hospital was due to tuberculosis.—Medical Record.

Berkeley, of New York, advocates medical treatment of every case of disease of the biliary tract before surgical measures are undertaken. He has made autopsy on a number of cases of surgically treated diseases of the biliary tract, and believes that there are many dangers and difficulties in operating on these organs. Ninety-five per cent of all cases occur after the thirtieth year and twenty per cent after the fiftieth year. The author recognizes that it is not possible to dissolve the stones that are already formed, but there are means by which the fluidity of the bile can be affected and formation prevented, and secretion stimulated in the biliary organs. Any saline purgative will act thus, but sodium phosphate is most useful. Diet should be mixed, and exercise should not be violent. The quantity of food taken at each meal should be small and the intervals short.—Medical Record.



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AN EXPLANATION

It has been our custom to publish the papers read before the State Medical Association as nearly in the order in which they appear upon the program as circumstances would admit. This year there were a good many clinical demonstrations, which were not written papers. We, of course, cannot publish these until the stenographer's corrected report reaches us. There will also be considerable delay in getting the corrected discussions, and until they are ready the papers that were discussed cannot be published.

The above applies also to the papers of the South Dakota Association.

We make this statement that those who are looking for the early publication of their papers will understand any delay that may occur.

ATTENTION OF SECRETARIES

Dr. McDavitt has sent to the secretaries of all the Minnesota societies the report of the "Committee on Medical Defense," with the request that the local societies consider the subject, and report to him. This report with the discussion on it as published in our issue of November 1st.

This matter has an importance far beyond the subject under consideration, although the subject itself is an important one.

The Committee recommends that the Association levy a regular per capita tax to defend its members against suits for malpractice. The ap-

parent inequality of the benefits to be derived from such a tax raises the interesting and somewhat altruistic question as to how far a professional organization should go in the defense of its own integrity assailed through individuals, for this, we take it, is exactly the situation in the modern so-called malpractice suits. No society can afford to defend its members against malpractice, but every society of professional men is bound to protect its honor, even though it be assailed through an individual member. The association is now called upon to decide whether to undertake the details of this business or to leave it to private insurance companies.

But the essential point is, that the Association refused to act in this important matter without a fuller expression of the views of its members than can be obtained at an annual meeting, and it is proposed to obtain such expression through a discussion of the subject at the local society meetings. For the sake of the precedent, we heartily recommend that such expression be obtained from every society, and, so far as possible, from every member. Such action on the part of the local societies would be evidence of their appreciation of the action of the House of Delegates, and no doubt would help to form a precedent which might be invoked in the future to prevent action that otherwise might prove very harmful. Delegated power is always subject to abuse, and this effort to avoid even seeming abuse of it is worthy of recognition.

The secretary who fails to get a full expression of the views of his society will be derelict in duty.

MEDICAL EDUCATION IN MINNESOTA

For the first time in the history of the state, medical teaching is unified under the care of the state and is conducted exclusively by the University of Minnesota. Nine times since 1871 private schools or colleges of medicine have been organized, or re-organized, to meet the immediate and peculiar demands of their period,—a distinctly developmental period in medical education.

One by one, these colleges have fulfilled their immediate purpose, have discontinued their service, or have been merged into the state institution. The last of these to surrender its charter and to yield its task to the state, has been the Department of Medicine of Hamline University.

In very few states of the Union is medical education under exclusively university control, and in but two are full colleges of medicine

maintained alone by the state. Especial significance attaches, therefore, to this event, which is to be celebrated at the University of Minnesota on the evening of December 8th, in the University chapel, in the form of an Historical Evening. The program planned for the evening includes addresses and remarks by former officers of medical colleges in the state, by the President of the University, the Governor of the State, the President of the Board of Regents, Regent Mayo, and Dean Westbrook. Its central feature will be in the form of the annual address of the college year, upon "The History of Medical Education in the State of Minnesota," which is to be made by Dr. Richard Olding Beard, of the Department of Physiology.

THE JOURNAL-LANCET wishes to impress upon the profession of the state the significance of this occasion and to suggest the opportunity it affords for a profitable visit to the University of Minnesota and for a closer acquaintance with the department of medicine, in particular.

THE NEEDS OF THE UNIVERSITY MEDICAL DEPARTMENT

Three years ago Dr. Elliott, or his estate, gave to the University of Minnesota a sum of money equivalent to about \$115,000 for the erection of the Elliott Memorial Hospital. The last session of the legislature appropriated \$25,000 a year for its maintenance, and a few citizens of Minneapolis gave \$44,000 to acquire a tract of land for a hospital site.

For many reasons it has been impossible to begin the construction of the hospital. The Board of Regents of the State University have several serious problems to settle before they can definitely determine where, how, and when the hospital shall be constructed. First, the enlargement of the campus and the probable laying out of a greater campus for all future years. This means skilled architects and also skilled artists, who, if they are familiar with this line of work, are difficult men to find and are, very naturally, high-priced. Such a man has been found, however, in Mr. Cass Gilbert, and the greater campus is on paper at least.

The condemnation of properties and the setting aside of funds for the purchase of these properties has been another stumbling-block in the path of the regents, but sufficient ground has already been obtained to begin actual work.

The third perplexing problem is the disposition of the railroads which spoil the campus, and which, if it were possible, should be entirely

removed. Railroads are universally slow about changing their expensive equipment, and yet it seems as if the greater campus of the University should not be made unsightly by trains dividing it and tracks obstructing its roadways.

Committees of the faculty have been at work for two years attempting to perfect an organization, have been studying hospital-construction and everything that pertains to the founding of a hospital, and they have repeatedly urged the Regents to grant their prayer and begin the work on the Elliott Memorial Hospital.

The more the subject is studied, the more evident it is that the original sum given to the University will not be sufficient to take care of the patients that will naturally come to the State Hospital, and the Department of Medicine and Surgery of the University has asked for the appropriation of an additional \$150,000 and a maintenance fund in order to meet the requirements for hospital-construction and clinical teaching.

Now is the time for every physician in the state who is interested in the University and the needs of the Medical Department to co-operate with the faculty and educate the future legislators by presenting a plain statement of these facts. It is hoped that the alumni will enter into this in a proper spirit and show their willingness, their interest, and their ability to convince the law-makers that the University needs greater and better clinical facilities.

EPIDEMIC POLIOMYELITIS AND EPI- DEMIC CEREBROSPINAL MENINGITIS

The recent epidemics of poliomyelitis and cerebrospinal meningitis in various parts of the country, and those that have occurred in Minnesota and in neighboring states, in which we are particularly concerned, are deserving of more attention than has been given them. In the towns where these epidemics have occurred, they have offered special advantages for study among the physicians who have come in contact with them. In many instances the diagnosis in either form is clear and well defined, but in a proportion of cases it has been exceedingly difficult to differentiate between the two types.

Several cases have been reported where the onset was practically the same in both forms of disease, and only by careful analysis and a clearing-up of some of the symptoms has it been possible to make a correct diagnosis. Unfortunately, very few of these cases have come to

autopsy; hence, no bacteriological investigation has been made except through spinal puncture.

It is exceedingly difficult to obtain permission to make post-mortems in the country districts, and it is equally difficult to do it properly in many places. Either the attending physician is not equipped with proper apparatus, or the delay in making a post-mortem makes the findings of little or no value.

There are but few symptoms in the onset of either form of disease that are of any value in arriving at an early diagnosis; and by comparing the parallel columns below it will be seen at once how impossible it is in the early stages to come to any definite conclusions.

ACUTE POLIOMYEL- CEREBROSPINAL MEN- ITIS INGITIS

Onset abrupt.
Fever moderately high.
Vomiting.
Headache.
Convulsions occasionally.
Delirium.
General exhaustion.
Pains moderate or severe in legs, with general hyperesthesia.
Sudden onset of paralysis in one extremity or one group of muscles, with rapid atrophy out of proportion to the other muscles.
Paralysis unchanged from two to four weeks; more or less improved subsequently.
Usually a residual paralysis.
Coma or prolonged stupor rare.
No other symptoms.

Onset usually abrupt.
Intense headache.
Vomiting.
Convulsions.
Delirium, moderate or extreme.
High temperature.
Petechial spots over chest, face, or extremities.
Muscular relaxations in hyperacute forms.
Muscular rigidity in the usual forms.
Nervous symptoms continue for two or three weeks.
Paralysis irregular and slow in onset, with recovery.
Extreme hyperesthesia.
Blindness or deafness.
Tremor.
Muscular rigidity, particularly of neck and spine.
Loss of weight to extreme emaciation.
Constipation.
In fatal cases, deep stupor or coma.
Perspiration and prostration.
Slow, weak, irregular pulse.
Death from exhaustion in from eight to twelve weeks.

In the milder types of disease, the diagnosis is less difficult, and yet in both forms, when the symptoms are apparently insignificant, very little attention may be paid to the onset and progress of the trouble, and the patient may make a practical recovery and leave the diagnosis obscure. In the typical forms of poliomyelitis the ultimate diagnosis is more readily made. The important symptom is the initial widespread paralysis, which diminishes rapidly within a few days or within the first week, when the physician will then be able to recognize the parts which will remain permanently paralyzed.

This retrogressive form of paralysis is typically characteristic of poliomyelitis, and is distinctly different from the progressive or con-

tinued paralysis which occurs in cerebrospinal meningitis. Hence, it is well in both instances to delay the diagnosis for at least a week unless the typical changes found in either disease are markedly present.

REPORTS OF SOCIETIES

MINNESOTA ACADEMY OF MEDICINE

The regular meeting of the Academy was held at the Minnesota Club, St. Paul, on Wednesday, November 4th. President-elect, Dr. J. E. Moore, was in the chair, and there were 31 members present.

After a short business session, Dr. W. A. Dennis presented a clinical case of "Rupture of the Rectus Femoris Muscle." Dr. A. T. Mann cited a similar case occurring in his practice.

President Moore gave his inaugural address, "Conservatism in Surgery."

Dr. C. Eugene Riggs read a paper entitled "Acute Psychosis in a Woman 82 Years of Age: the Apparent Relation of High-blood Pressure to Mental Disturbance." The paper was discussed by Drs. White, Ritchie, Jones, Sneve, Gilfillan, and Schwyzer.

Dr. Dennis, of St. Paul, read a paper, "Report of Case of Popliteal Aneurysm."

After a general discussion, the Academy adjourned at 10 o'clock.

A. W. DUNNING, M. D., Secretary.

THE HENNEPIN COUNTY SOCIETY

A regular meeting was held on November 2d, the president, Dr. F. A. Knights, being in the chair and 55 members present.

Dr. Geo. Douglas Head presented some cases on which he demonstrated the use of tuberculin for diagnostic purposes.

Dr. G. P. Sedgwick showed a case in which tuberculin had been applied to the skin for diagnostic reaction, and a typical reaction occurred.

The Censors having reported favorably Dr. T. E. McDermott was elected to membership.

The following names were duly proposed for membership:

Dr. Theo. Tennyson, 54 S. 3d St.

Dr. H. E. Robertson, 511 15th Ave. S. E.

Dr. Albert H. Parks, 804 Pillsbury Bldg.

Dr. Robert R. Rome, Andrus Bldg.

Dr. Minor Morris, Hopkins.

In response to a communication from the Board of Education it was moved that a committee of three be appointed by the chair to meet

the Board of Education and a committee from the Women's Club and others to discuss the matter of medical inspection in the schools. This was seconded and carried.

The chair appointed the following committee: Dr. W. A. Jones, chairman; Dr. C. A. Donaldson, Dr. F. A. Knights.

The scientific program being in order, Dr. L. A. Nippert read a paper on "The Diagnosis of Incipient Pulmonary Tuberculosis." This was followed by a paper by Dr. J. W. Bell on "The Home Treatment of Tuberculosis."

Dr. C. A. McCollom then gave a review of the "Findings of the International Congress for the Study and Prevention of Tuberculosis." Those entering into the discussion were Dr. G. D. Head, Dr. A. E. Hedback, Dr. C. A. Nootnagel, Dr. H. L. Ulrich, and the essayists.

C. H. BRADLEY, M. D., Secretary.

NEWS ITEMS

On Tuesday evening, December 8th, the Faculty of the College of Medicine and Surgery of the University of Minnesota, will celebrate the unification of medical teaching in the state, with an historical evening in the University chapel.

The annual address will be given upon this occasion by Dr. Richard Olding Beard, and will be devoted to "The History of Medical Education in the State of Minnesota." Brief addresses will be made by President Northrop, Governor Johnson, Ex-governor Lind, President of the Board of Regents, Dr. W. J. Mayo, Dean Westbrook, and by Drs. Alex J. Stone, Chas. A. Wheaton, J. T. Moore, C. A. McCollom, F. A. Dunsmoor and Parks Ritchie, all former officers of Medical Colleges in the state.

Formal invitations have been issued to all the members of the State Medical Society, and a further invitation is given, through these columns, to all physicians to visit the University and to assist in commemorating this occasion.

Dr. J. T. Speck, of Barnum, will locate in Chicago.

Dr. T. J. Jensen has moved from Beaver Creek to Madelia.

Dr. E. A. Lupton, of Bovey, has started a hospital at that place.

Dr. William Magee, of Chicago, has located in Watertown, S. D.

Dr. J. C. Kettner has moved from Hosmer, S. D., to Leola, S. D.

Dr. W. W. Brown has moved from Cleveland, Minn., to Ladysmith, Wis.

Dr. W. K. Jacoby has moved from Willow City, N. D., to Towner, N. D.

Dr. J. A. Johnson, of Bottineau, N. D., has opened a hospital at that place.

Dr. Harriette Beebe, a homeopathic physician of Minneapolis, died last month.

Dr. A. V. Elliott, of Beresford, S. D., is doing post-graduate work in Chicago.

Dr. S. E. Cotter, of Corning, Iowa, was killed in an automobile accident last month.

Dr. W. R. Humphrey, of Stillwater, is doing post-graduate work in New York City.

St. John's Hospital of Red Wing will have an addition to its building to cost \$12,000.

Dr. A. G. Chadbourn, of Kramer, N. D., is doing post-graduate work in Philadelphia.

The Hospital Association of Benson has decided to either erect or purchase a building.

Dr. Sarah D. Washburn, of Hudson, Wis., has moved to California on account of poor health.

Dr. S. Sprecher, who formerly practiced at Mitchell, S. D., is now located at Parkston, S. D.

The trained nurses of the United States will hold a national convention next June in Minneapolis.

Dr. F. W. Briggs, of International Falls, was married last month to Miss Jennie Crouse, of Benson.

Dr. P. J. Weyrens, of Ivanhoe, has become associated with Drs. Claydon & Johnson, of Red Wing.

Dr. Alexander Barclay, of Cloquet, was married last month to Miss Agnes May Gedney, of St. Paul.

Dr. Frederick Cuttle, of Hunters Springs, Montana, has been doing post-graduate work in the East.

The State Board of Health of Montana, has ordered that all pupils in the public schools must be vaccinated.

Dr. J. H. Bong, of Jasper, will spend the winter in Reno, Nev., continuing in the practice of ear and eye work.

Dr. S. M. Souders, of Red Lodge, Montana, is erecting a handsome building for a hospital and sanitarium.

The State Board of Examiners for nurses will hold an examination at St. Luke's Hospital, Duluth, on Dec. 11th.

Dr. T. J. Maloney, of St. Paul, deputy coroner of Ramsey County, has entered government service and will be stationed abroad.

Dr. Murdock McGregor, of Fessenden, N. D., has moved to Fargo, and entered into partnership with Dr. Cyrus N. Callander, of that place.

Dr. L. F. Woodworth, a recent graduate of the University of Iowa, has located at Marshall and become associated with Dr. Wheat of that place.

Dr. V. E. Verne has purchased Dr. C. R. Sanborn's practice at Parker's Prairie and also Fairview Hospital, which Dr. Sanborn established.

Dr. Robt. G. Stevenson, of Chicago, will have charge of the business of Dr. O. A. Burton, of Albert Lea, while the latter is in the south during the winter.

Dr. Matthias Gau, who practiced medicine in Minnesota, at St. Cloud, Melrose, Belle Plaine, and Stillwater for forty-five years, died last month in California.

The work of medical inspection will have a pretty thorough trial in Minneapolis schools this year, the sum of \$5,000 being available to pay the expenses of the work.

Dr. H. V. Magnusson, who has been practicing at Clinton since his graduation from the State University in 1903, has moved to Minneapolis with offices at Lake and Bloomington.

Dr. Edward G. Ertel has purchased the practice of Dr. J. W. Andrist, of Ellendale. Dr. Ertel is a 1907 graduate of the Medical College of Ohio. Dr. Andrist has gone to West Concord.

Dr. J. Stough has sold his practice at Verona, N. D., to Dr. H. B. Wentz, and will move to Illinois. Dr. Wentz is a Chicago graduate, and has done special work as instructor in chemistry.

It was unfortunately announced in our last issue that Dr. B. M. Behrens, of Minneapolis, was dead. Dr. Behrens is still in a very critical condition, but the attending physicians think he will recover.

Dr. William F. Braasch and Miss Nellie Stinchfield, of Rochester, were married last

month. Dr. Braasch is a graduate of the State University, class of '04, and is on the Mayo staff. The bride is the daughter of Dr. A. W. Stinchfield.

At the November meeting of the Black Hills (S. D.) Medical Society the following were chosen officers for the coming year: President, Dr. A. G. Allen, Deadwood; vice-president, Dr. A. M. Giffin, Rapid City; secretary, Dr. F. E.

Ashcroft, Deadwood; treasurer, Dr. W. L. Vercoe, Lead. The attendance was large, and the papers and discussions were excellent.

The following physicians were admitted to practice in North Dakota at the October examinations: Alexander, Ida M., Foreman; Fowler, H. H., Bismarck; Gibbons, J. M., Mercer; Gunz, A. N., Minot; Harris, L. A., Knox; Heinsrath, G. E., Turtle Lake; Husser, A. A., Minot; Kranz, Martin, Mandan; McArthur, C., Reynolds; Nelson, W. P., Fargo; Patterson, C. H., Enderlin; Pratt, C. D., Grand Forks; Thoralsen, O. A., East Grand Forks, Minn.; Weeker, A. J., Douglas; Wilson, W. C., East Grand Forks, Minn.

At the November examinations held by the Montana State Board of Medical Examiners, twenty-one applicants failed to pass, and twenty-eight received certificates. They were the following: Anna A. Cook-Owens, Hamilton; Olive V. Brasier, Butte; Edward D. O'Neill, Great Falls; J. R. Arthur, Harlowton; Frank P. Thomas, Sand Coulee; Addison Bybee, Livingston; H. C. Randolph, Missoula; E. M. Rundquist, Missoula; A. R. Varco, Sidney; E. A. Loomis, Somers; C. S. Smith, Bozeman; W. R. Morrison, Minneapolis. E. A. Johnston, Alhambra; F. Epplen, Miles City; V. C. Lanphier, Butte; E. G. Balsan, Billings; T. W. Welsh, Roundup; W. H. Brissenden, Roundup; W. A. Hulbush, S. T. Orton, Anaconda; C. J. Elmer, Butte; C. B. Rodes, Jr., Butte; A. T. Gilhus, Melstone; W. D. Madden, Great Falls; T. E. Murray, Malta; K. Hamilton, Malta; J. T. Wolf, Butte; B. V. McCabe, Helena; Katherine D. Mahoney, Billings; W. H. Melvin, Terry.

PHYSICIANS LICENSED AT THE OCTOBER (1908) EXAMINATION TO PRACTICE IN MINNESOTA

UPON EXAMINATION

Bristol, Leverett Dale. . . Johns Hopkins, 1907.
Collins, Arthur Nelson. Harvard, 1906.
Donahoe, Robert A. . . . McGill, 1908.

Giroux, Alcibiade Alex. Laval, 1908.
 Kingsley, Royal J. Hamline, 1908.
 McGroarty, John J. . . . U. of Minn., 1907.
 Shaw, Robert McLeod. McGill, 1906.
 Sylvester, Florence M. U. of California, 1907.

RY RECIPROCITY

Arneson, Thos. P. & S., Iowa, 1898.
 Brown, Silas E. U. of New York, 1883.
 Buser, John R. P. & S., St. Louis, 1907.
 Callander, Cyrus H. . . . Trinity Med. Col., 1897.
 Ertel, Edward Q. Med. Col., Ohio, 1907.
 Gilbert, John D. P. & S., Chicago, 1890.
 Leebens, John H. P. & S., Chicago, 1907.
 Looftbourrow, E. H. . . . P. & S., Illinois, 1906.
 McBroom, David Ed. . . . Ohio Med. Col., 1907.
 McCoy, Jos. Ellsworth. Hosp. Med. Col., Ky.,
 1897.
 McNevin, Chas. F. Northwestern, 1908.
 Metcalf, Frank W. Rush, 1906.
 Molzahn, Herman E. . . . U. of Mich., 1885.
 Morse, Wm. E. H. Geo. Wash. Univ., 1908.
 Phaneuf, Stanislas Jos. U. of Vermont, 1891.
 Richmond, Chas. D. . . . U. of Minnesota, 1905.
 Simison, Chas. Wade. U. of Missouri, 1907.
 Stocking, Fred F. Rush, 1906.
 Thorson, Edward O. . . . Bennett, 1906.
 Wood, Wm. W. P. & S., Chicago, 1906.
 Woodworth, Leonard F. State U. of Iowa, 1908.
 Worthing, I. E. M. Northwestern, 1908.

HOSPITAL POSITION WANTED

A nurse of five years' experience would like a hospital position; competent to take charge. References given. No objection to going to the country. Address C. M. S., care of this office.

FOR SALE OR TRADE

A static and x-ray machine with all accessories including x-ray tube; all in first-class condition. Will sell for \$75.00 or trade for a good microscope. Address J. A. Hohf, M. D., Tripp, S. D.

FOR SALE AT HALF PRICE

A practically new x-ray and static machine, with or without an alternating electric; one-third horsepower motor. The best machine on the market; never out of order. Address A. C. Tingdale, M. D., 303 Donaldson Bldg., Minneapolis.

PRACTICE FOR SALE

A \$3,500 to \$4,000 practice in Western Minnesota, town of about 1,440 inhabitants. Good surgeon and one that can speak German could easily double income in a year. Address No. 43, St. Barnabas Hospital, Minneapolis.

AUTO FOR SALE

A Holsmans auto, with removable rear seat and canopy top. In good condition; new chains and cables. The owner (a physician) is going to the city. Price \$450. Can be seen for demonstration at Spearfish, S. D. W. R. Irwin, drugs, Spearfish, S. D.

PRACTICE FOR SALE

Unopposed \$5,000 practice in village of 600 inhabitants, in eastern North Dakota, German and Norwegian speaking, for \$1,000.00. Will give thorough introduction to purchaser. Must be sold at once; wish to continue special work. Address A. F., care of this office.

PRACTICE FOR SALE

Office fixtures and practice; entirely unopposed in a Southwestern Minnesota up-to-date, lively town of 400 population on main R. R. line. Nearest doctors, 13 miles. Also an option on a \$6,000 annual drug business, if desired. An exceptional opportunity for the right man. Address N. B., care of this office.

AUTO FOR SALE

A Ford auto; used only four months; as good as new. A 3-seated, 18-horse power, 1908 machine. Hardly a scratch on varnish or tires; full top; drop glass front, oil lights, large gas lamps, and tools. Has had no accidents and needs no repairs. Will guarantee its condition. Address H. C. K., 2294 Commonwealth av., St. Paul.

PRACTICE FOR SALE

In a town of 600 inhabitants in the south central part of Minnesota, a practice worth \$2,100 a year; can be materially increased by a German-speaking doctor. Well settled community of Germans. Collections good. Office furniture, team, etc., \$1,000. Affords an excellent opportunity for a German-speaking doctor. Will sell or rent residence. Address M. G., care of this office.

BOOKS FOR SALE

"Diseases of Children," Pfandler; English Translation; 4 vols., cloth, new. \$15.00, cost \$20.00. Address A. M., care of this office.

PRACTICE FOR SALE

In Southern Minnesota in town of 600; mixed population; no other physician; practice pays \$4,000 a year; will give good-will and introduce the physician who will buy my residence, new and modern. Price, \$6,000; \$2,500 cash, balance to suit purchaser. Address, C. F., care of this office.

Special Notice to Physicians—Practices bought and sold, and new physicians located. Correspondence solicited. The Druggists, Dentists and Physicians Exchange, Albert Lea, Minn.

To the Medical Profession—Mr. J. M. E. Stranger and Mrs. E. B. Ridout, trained nurses, announce that they have opened at 611 Donaldson Building, Minneapolis, rooms completely equipped for the administration of massage, Swedish movements, electric-light baths, hydro-electric baths, and general hydropathic treatments, their purpose being to treat patients only on the prescription of their physicians.

Physicians, Attention—Drug stores on easy payments, etc. Drug store positions, United States or Canada. F. V. Kniest, Omaha, Nebr.

Doctor—If you want practical post-graduate work during fine season in the delightful city, write for particulars. New Orleans Polyclinic, P. O. Box 797, Post-Graduate Medical Dept., Tulane Med. University.

THE JOURNAL OF THE MINNESOTA STATE MEDICAL ASSOCIATION AND THE NORTHWESTERN LANCET

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ABDOMINAL OPERATION--REPORT OF 108 CONSECUTIVE CASES WITHOUT A DEATH*

BY GEORGE C. BARTON, M. D.

MINNEAPOLIS

In reporting the series of one hundred and eight consecutive abdominal operations without a death, I do not want you to understand that I then had a death, for I did not, and have operated on other cases since beginning the paper who are also in a fair way to recovery. I do not intend to give the history of each patient operated upon, but to group the cases according to the diseased condition and to point out interesting features,—or, at least, those which were interesting to me,—in the hope that you also may be interested.

In this series of cases there has been no effort at selection. Any patient asking relief, even though his or her chances were not very good, was given the chance. I operated on several cases in this series who had been refused operation in other towns for no reason that I could see, except that they were serious cases. One case of cancer of the uterus presented itself that I refused to do a hysterectomy on because I believed the bladder and broad ligaments were involved. In this case I curetted out the mass and burned with the actual cautery. After leaving the hospital, she consulted another man who, I am informed, did a hysterectomy. His judgment may have been better than mine.

No operation has been entirely exploratory, that is, I have not always found exactly what I

expected to find, but I have always found that which needed surgical interference.

In the series there were twenty-nine pus-tube cases. Some of these cases had large quantities of pus present, and in getting out the mass the abscess would be ruptured, and pus spilled in the pelvic cavity. The pus would be rapidly sponged out and the operation completed, filling the pelvis with hot normal salt solution and closing the abdomen without drainage. In one case I left gauze in the abdomen, but this was not done for drainage, but on account of extensive oozing of blood, which I was unable to control in any other way. I packed with gauze back of the uterus. This was a patient who had been operated on several years ago and since that time had had periodical attacks of chills, fever, and pain, when there would be a discharge of pus from the bowels, and she would then get better for a while. At the operation I found extensive intestinal adhesions, but did not find any bowel opening. The next day after removing the gauze packing I had a fecal fistula. This has closed spontaneously, and the woman does not suffer from any of her former symptoms.

In twenty-three of these twenty-nine pus-tube cases, I did some other operation at the same time. The appendix was removed in twenty-two of the twenty-nine cases. In a few of the patients I curetted, did a trachelorrhaphy and a per-

*Read before the Hennepin County Medical Society, October 5, 1908.

ineorrhaphy, and then removed the pus-tubes and appendix.

I have always used my best judgment as to the safety of doing multiple operations on any one patient. Each patient should be judged individually. I used to see patients suffer very much from shock; now I rarely do. Few patients have given better results as a result of surgical means than have these cases of pus-tubes. In no case, however, did I do a laparotomy in the acute stage of a salpingitis.

In 66 of the 108 cases reported I removed the appendix, but only in 26 of the cases was the operation done alone to remove a diseased appendix, and in 5 of the cases the operation was simply opening an appendiceal abscess. These, added to the 26 cases in which the appendix was removed, make a total of 31 cases in which the operation was primarily an appendiceal trouble. In a number of the cases in which the appendix was removed pus was present either in or around the appendix. In these cases it was deemed safe to remove the appendix because the acute symptoms had subsided. Drainage was not used in these cases. The cases where the abscess was opened and drained are the only cases in which drainage was used.

Only in one case were there any special features. In that case the history was that an abscess had ruptured into the bowel and a teacupful of pus discharged per rectum. At the operation I found the end of the appendix had sloughed off and was surrounded by omentum, and this was adherent to the parietal peritoneum. I detached this mass, tied off the omentum, and removed the mass. I then removed the stump of the appendix and closed up the abdomen, not finding any pus. The young man had no trouble after the operation until we began to try to get his bowels open. His highest temperature was 99.4°, and highest pulse 90. On the second day he was given an enema without any result. He was then given two grains of calomel, which caused pain and vomiting, so that he had to be given morphine. For six days we tried all manner of means to open his bowels, putting him in the knee-chest position and injecting Noble's enema as high up as a rectal tube would go, and without any result. His vomitus had become stercoraceous, and we washed out the stomach, but without any benefit. His pulse had gotten up to 120, and I believed him to be in a desperate condition. We took him to the operating-room, reopened the incision, and found back behind the cecum a small quantity of pus that we

either did not find at the first operation or else there had been some infection, and it was formed after the operation. The pus was mopped out carefully, and the distended bowel searched for, which, as near as we could tell, was the ileum just before it opened into the colon. I anchored this by four chromicized catgut sutures to the abdominal wall and stuck a narrow-bladed knife into it. Feces flew out over everything. After the bowel was emptied the abdominal incision was left almost entirely open. I think I put in one stitch, and he was hurried back to bed. His vomiting ceased, and he had no further trouble. In four or five days his bowels moved naturally, and after they had acted naturally for a few days, I put in a mattress suture and closed the opening and with very little pain to him, and he made a good recovery. Dr. Rochford saw this case and suggested trying the knee-chest position.

In the series there were three cases of ectopic pregnancy, two operated on after rupture and one before rupture. The one operated on before rupture had some interesting features, as there was an ectopic pregnancy on one side, and on the other the tube was filled with a bloody, serous fluid. This case I have already reported in a paper before The Western Surgical and Gynecological Association.

There were two cases of hydrosalpinx which presented no unusual features, and thirteen cases in which I removed cystic ovaries or parts of ovaries. In these I had two cases in which there was but one tube and ovary. In the one case I removed the right tube and ovary and on searching for the left tube and ovary found a stump of the tube and ovarian ligament about an inch long, which looked as if, at some other time, the ovary and tube had been removed; but she had never previously been operated on. In the other case I could find no sign of either tube or ovary, and this also was on the left side.

I also removed in this series one fifty-pound ovarian cyst from an old lady who had raised a large family and had continued to do hard work up to the time she came to the hospital, although she said she had not seen her feet for two years. It was a multilocular cyst.

In one of these cases, I had removed in the morning a right cystic ovary and tube and the appendix, and had done a ventral suspension of the uterus; and in the evening I was called to see the patient who was not doing well. I found her in bad shape and decided she was having a secondary hemorrhage. We took her to the op-

erating-room and, assisted by Dr. Farr, who was in the hospital at the time, we quickly opened up the abdomen and found it full of blood. The ligature around the ovarian artery had not been tied tight enough and had continued to bleed, although the ligature was still in place. We tied the bleeding artery quickly and closed the abdomen. She made a good recovery. This was my first and only experience with a secondary hemorrhage.

I did a Gilliam or Gilliam-Ferguson operation thirteen times. A number of these were done in connection with some other operative procedure. I also did a ventral suspension three times. These were all done after doing some other operation on tubes and ovaries.

There were four hysterectomies for fibroids. These tumors were all large. Three of the cases presented features of interest. These I have already reported in a paper before the Pan-American Medical Congress, but as this paper has not yet been published, I will give to you the interesting features.

In the one case there was a large intraligamentous fibroid which had undergone myxomatous degeneration. This tumor filled the pelvis and pushed up the peritoneum posteriorly, and again anteriorly more than half way to the navel. It had its origin from the left side of the uterus and from the lower third of it. In the upper part of the body of the uterus was a large, solid fibroid which rested like a hill in a valley between the anterior and posterior parts of the cystic tumors. I slit open the broad ligament and enucleated the cystic tumor without much trouble, and then did a supravaginal hysterectomy. The most difficult part of the operation was to control the bleeding from the large surface left by enucleating the intraligamentous tumor. We finally packed this cavity and closed up the peritoneum over it, bringing out the gauze at the lower angle of the wound. This left the packing entirely extraperitoneal. She lost very little blood after this, and made a good recovery.

The second case was interesting because of two features. First, I operated on her with a hemoglobin estimate of 20 per cent. I did this because she had been in the hands of Dr. Donaldson, who I knew was thoroughly capable of doing everything that could be done to prevent hemorrhage and get her in better shape, and her next menstrual period was due in a few days, from which she would probably emerge in a worse condition than she was then in. The operation was done quickly and without the loss of

any blood to speak of. She was given a hypodermoclysis of normal salt solution and put to bed. The afternoon of the same day of the operation her bowels moved four times. The next twenty-four hours they moved twelve times, and the next twenty-four hours seventeen times, and the next twenty-four hours eighteen times, and moved in all for the seventeen days she was in the hospital after the operation 147 times. Her special nurse, who was thoroughly reliable, said they were all fecal movements, and, strange to say, they did not weaken her. She said she felt better each day. The hemoglobin estimate increased over 10 per cent while she was in the hospital.

The third case is one in which I had removed a fibroid by supra-vaginal hysterectomy six years before, leaving only the neck of the uterus, and from this stump there grew another fibroid tumor which had attained the size of nine pounds when it was removed. It had pushed up the peritoneum so that the bowels were coiled around anteriorly to the tumor. I incised the peritoneum, removed the tumor, and closed up the abdomen, as there did not seem to be much bleeding. She developed a hematoma, which afterwards I had to open and drain through the vagina, but not withstanding this, she made a very good recovery.

I had nine hernia operations. Three of these were ventral hernias and six inguinal hernias. Of the inguinal hernias two were bilateral. One was a direct inguinal hernia in a young woman. She had been fitted with a pessary and told she had a uterine displacement. If the attending physician had listened to her statement that she had an enlargement in her groin, which disappeared when she lay down, it does not seem possible that he could have made such a mistake. In the inguinal hernias I did the Ferguson operation and have been well pleased with the result.

There were three gall-bladder operations, in two of which gall-stones were removed, one having quite a large stone in the cystic duct, which was removed with considerable difficulty. The third case was a secondary operation for an infected gall-bladder from which gall-stones had been removed about ten months before.

There was one case of perforating ulcer of the stomach. In this case there had been a perforation, and some stomach-contents had been discharged into the peritoneal cavity. This had been walled off and surrounded by omentum, and nature had closed the opening into the stomach. Suppuration had commenced in the cavity

containing the stomach-contents. I opened and cleaned out this cavity and packed with gauze and the patient made a very good recovery.

I had one case of tubercular kidneys and bladder. The left kidney had a very large abscess in it, which I opened and drained. I did not remove the kidney because we had found by cystoscopic and ureteral examination that the right kidney also was involved, and there were several tubercular ulcerations of the bladder, one involving the mouth of the right ureter.

In conclusion, I want to add that for two years I have had but one stitch abscess and that was a very small affair, and was well in a few days. The winter before that during my service at the City Hospital, I had a large percentage of stitch abscesses, and I found that other men were having them also. Through the perseverance and energy of Miss Erdmann and Miss Watson, something was done, which, so far as I was concerned, stopped the stitch abscesses. I also attribute the fact that I have not for so long a time had stitch abscesses to the closing of the skin with a subcuticular stitch, and that I use only Van

Horn's chromicized catgut in closing the abdomen. As an anesthetic I always use ether, and in one of my pus-tube cases I had an ether pneumonia, which gave me some anxiety, but fortunately terminated favorably. Do not criticize ether on this account, for a few years ago I had a pneumonia following chloroform, which was more severe, although the patient finally recovered. The statement that the troublesome condition, vomiting, is worse after ether I do not believe is true, as few of my patients vomit more than once or twice just as they are becoming conscious, and many of them do not vomit at all. This I attribute partly to the giving of 1-6 grain morphia and 1-150 grain atropine, half an hour before the anesthetic. To this I also give the credit of preventing shock, because the patient's nervous system has been quieted by the morphia before being taken to the operating-room. One patient recently expressed it this way: she thought it a good thing, for when she got to the operating-room she felt like just going to sleep.

THE DIAGNOSIS AND TREATMENT OF INCIPIENT TUBERCULOSIS*

By L. A. NIPPERT, M. D.

MINNEAPOLIS

Of what inestimable value to the human race would be the discovery of a method by which cancer could be diagnosed at its very beginning! To a scarcely less degree mankind would be benefited by the finding of a sure means of recognizing pulmonary tuberculosis in its incipency.

From the moment the tubercle bacillus finds a nidus in the terminal bronchiole, and, multiplying, begins its destructive activity, pulmonary tuberculosis has commenced. It is incipient until its products show manifest local changes, or, breaking down, are discharged through the bronchi. After a variable time the individual affected develops a train of symptoms indicating disturbed nutrition, as indigestion, anemia, abnormal variations of temperature, and albuminuria. The heart's action becomes rapid, the pulse frequent and deficient in strength. To these are added psychic manifestations, such as

irritability, lack of decision, erotic ideas, and inability to appreciate the seriousness of his condition. Sooner or later localizing symptoms, such as cough, pain in the chest and back, hemoptysis, and occasionally dyspnea, point to the lungs as the seat of disturbance. Physical signs, so important and conclusive in later stages, are vague and undecisive. A somewhat tympanitic note over one apex, a slightly harsher interrupted breathing-sound or a diminished vesicular murmur cause us to suspect tuberculosis, but they are not convincing. The finding of the bacillus in the sputum, an absolute proof of the existence of pulmonary tuberculosis, shows an advance of the disease beyond incipency. Attempts to obtain them at an earlier stage by puncturing the lung are not practicable, except perhaps in cases of unresolved pneumonia.

Following his discovery of the specific organism, Koch, as the result of animal experiment, found a specific agent, an extract of bacilli killed

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by heat, which he named *tuberculin*. If 1-10 mg. is injected in a fever-free human being with a tubercular focus it produces a reaction. This reaction is both general and local. The general reaction, expressed by a rise of temperature from eighteen to thirty-six hours after administration, by headache, backache and general malaise, is quite characteristic. Pain in the chest, increased cough, and expectoration, the latter at times bloody and possibly containing bacilli heretofore not found in the sputum, and mucous râles indicating the focus of the disease, most commonly found, according to Birsch-Hirschfeld, two cm. below the apex, show the violence of the reaction. This *local* reaction is the most reliable sign of a beginning pulmonary tuberculosis at our command. Why is it, then, that in this progressive age a method, almost painless, so simple and yet so decisive, has not become the common property of every physician anxious to come to a positive conclusion? Why do we spend hours of weary investigation and examination in our attempts to find a cause for the vague subjective symptoms before us?

First. Because clinically healthy persons react frequently, as was shown in experiments in the Institute for Infectious Diseases in Berlin. Of over 2,000 persons with no clinical nor bacteriological evidence of tuberculosis 46 per cent gave a positive reaction.

Second. Because of the risk of overcharging the system with a poison so powerful as to be capable of producing an intense general reaction in doses of 1-10 to 1-100 of a milligram of old tuberculin.

Third. Because of the risk of lighting up a quiescent focus and possibly scattering its bacilli throughout the system.

While the enthusiastic advocates of tuberculin deny such occurrences as a result of tuberculin injection, it appears to the writer that Sahli's position, namely, that every reaction following the use of tuberculin means damage done, is a logical and correct one. Unless we are followers of the principle of *similia similibus curantur*, the appearance of fever, increased, even bloody expectoration with bacilli, and pain in the chest with moist râles over an apex, all of which symptoms were absent before injection, compel us to infer that a change for the worse has taken place. That this change is the first step to a cure of the latent focus is an unproved assumption.

Trudeau stated two years ago that as a diagnostic agent tuberculin had been used at the

Saranac Sanatorium occasionally in the past fifteen years with three untoward results, which may have been coincidence. To the writer it would appear that, with due consideration to the safety of our patients, the greatest value of tuberculin is in cases in which our methods of investigation have convinced us of the absence of pulmonary tuberculosis. Here a negative result of tuberculin injection gives us additional assurance of the correctness of our opinion.

In July last year, while attending clinics in Berlin, I saw two new methods of specific diagnosis tried: the ophthalmoreaction recommended by Calmette of Lille, in France, and the cutaneous reaction by Pirquet of Vienna. In the former a 1 per cent solution of tuberculin dissolved in water (dry tuberculin is used to avoid glycerine irritation) is dropped in one eye after inspection of both conjunctivæ. A reddening of the conjunctiva occurs in ten to twelve hours after instillation. It disappears after two to six days. Since then this and Pirquet's method have been tried extensively here and abroad. After a trial in 409 cases in Strumpell and Uhthoff's clinic in Breslau their final decision is as follows: "We do not think that the ophthalmic reaction is advisable in practice, as its results are not entirely certain, and the possibility of severe reaction can never be excluded."

As demonstrated before the International Antituberculosis Congress at Vienna, Pirquet vaccinated the forearm with a mixture of one part tuberculin, one part carboglycerine, and two parts normal salt solution. The part inoculated shows a zone of redness, followed by a slight papule within twenty-four hours with the maximum effect in about forty-eight hours. All signs disappear after eight days. There is no general reaction. This method is recommended in early childhood, as it has been found that almost all adults react in consequence of some latent tubercular deposit. The reaction is, however, so delicate that its absence in an adult is of positive value in excluding tuberculosis. Arloing and Courtmont's method of diagnosis by agglutination has not proved the claims of the originator. The use of tuberculin incorporated with equal parts of tanolin and used by inunction, as advocated by Moro of Munich, is a recent modification of Pirquet's method.

None of the methods mentioned is of value in locating the focus, which does not react as it does after the hypodermic use of tuberculin. Neither vaccination nor ophthalmoreaction can

enlighten us in regard to incipient pulmonary tuberculosis. The hypodermic use of tuberculin is not entirely reliable nor entirely safe. Therefore we cannot depend on these easy steps to diagnosis, but must form our conclusions from evidence gained by exhaustive inquiry and close observation.

Our inquiry begins with the family history. Although a direct transmission of the disease from parent to offspring has never been proven, physical defects impairing the organs of respiration may be traced through families. Any malformation of the thorax may interfere with the full development of the lung capacity. Especial attention has been called by Freund and Brehmer to the short anteroposterior diameter of the upper portion of the chest and the short cartilages of the first ribs, limiting their mobility, as predisposing factors. A transparent, waxy skin, regular teeth with a red line along the gums, a fine growth of hair covering the back and chest, are other minor indications of degeneracy.

That children inherit from a tubercular parent a disposition to develop the disease, or, in other words, that there is a *locus minoris resistentiæ* familiæ is an observation as old as the disease. It has, however, lost much of its importance through the discovery of the bacillus. Infection has superseded inheritance.

The active age of development, 15 to 30, is the time of life in which pulmonary tuberculosis is most likely to take its beginning. The surroundings and occupation of the patient must be considered. Previous illnesses must be carefully investigated, particularly those of the respiratory system, such as adenoids, pneumonia, bronchitis, and especially pleuritis, and also measles, typhoid, pertussis, and influenza. A history of tuberculosis in other parts of the body, such as bones, generative organs, skin, and especially of the lymphatic system, demands our attention. After infection, after a period of not less than six months, according to Comet, the general symptoms of disturbed nutrition begin.

Indigestion, often an early symptom, is manifested by pyrosis with gastric discomfort, disgust for foods, especially fats, and constipation. Anemia is frequently marked at the onset, especially in girls. A sublingual anemia seems to the writer more pronounced in the tubercular than in any other form of beginning anemia. Menstrual irregularities are not uncommon, much less, however, than in the more advanced stages. Loss of weight is of much importance.

To determine it, the patient should be weighed by the physician. While fever in other illnesses causes much general discomfort, the slight variations of temperature in incipient tuberculosis are not noticed. These variations of temperature are of the utmost importance in diagnosis. They must be carefully noted and recorded. It is not necessary to have the evening temperature much above normal. A morning temperature of 97.5° (subnormal) and an evening temperature of 99.4° are as significant as a normal temperature in the morning and 100° in the afternoon. Not so much the height as the variations are diagnostic. Sweats at night may follow fever. Kraus believes that they may also occur as the result of toxins. We should not neglect to observe the effect of physical or mental exertion upon the temperature. Finally, localizing symptoms point to the respiratory organs.

Cough, dry and hacking, is a classical symptom. It may at times be severe from the onset, almost like whooping-cough. Sometimes it is of catarrhal character with mucous sputum. A slight hoarseness not infrequently precedes it. Hemoptysis is always an alarming symptom to the patient. The numerous other sources, especially those due to cardiac affection, as well as bleeding from the prima via, as from varicose veins of the esophagus or ulcer of the stomach, must be excluded. The statement of the patient as regards absence of cough cannot be relied upon. He will deny having the slightest cough while coughing in your face.

Pain in the upper portion of the chest and between the shoulders should not be covered with a blanket diagnosis of rheumatism, but should receive due attention and investigation.

Dyspnea is rare at the beginning; in fact, in the writer's observations, it is more liable to be present in the nervous individual, who fears the disease and comes to examination on ungrounded fear. The knowledge of the psychic changes above mentioned will restrain us from judging harshly and not permit us to ascribe to temper and perversion a state of mind caused by tubercle toxins.

Our examination of the patient must be complete. We note the slight pallor of the face, the mobile or dilated pupil with glistening conjunctiva, the soft hair, the fine teeth with a red line on the gums, the sublingual anemia, the red ears, etc. The patient is stripped to the waist. Scars on the neck are seen, and glandular enlargement found on palpation. A large vaccination-scar indicates a former ten-

dency of tissues to break down. Enlarged veinules between the shoulders and the fine hair on the chest and back are evident. Flatness of the upper portion of the thorax, with prominence of the angle of Lowis, are more pronounced when the patient is lying on a hard table. Subcutaneous lymph nodes may be felt over the thorax similar to those on the abdomen in tubercular peritonitis. Finally, a little difference in expansion may indicate on which side to look for the trouble. Percussion reveals but little; the upper border of one lung may not extend as high as the other, but considering the normal difference, this is of little importance. There may be a slightly tympanitic note over the affected area. The heart is frequently found disproportionately small. On auscultation to a practiced ear, a diminished respiratory murmur over one of the apices is very suggestive, and if to this is added an occasional squeak, or fine crackling râles, confined to one location, one of the strongest links in the chain of evidence of incipient tuberculosis has been disclosed. It is sometimes developed after the administration of potassium iodid or after the use of cold compresses. Harsh or cogwheel respiration is more often due to nervousness influencing the breathing of the patient; pseudorales from friction of the stethoscope or muscular contractions

must be excluded with especial care. Blood-count and blood-pressure show no change of practical value. Most significant is an habitual tachycardia. The accelerated pulse is of small volume and lacking force, and is easily influenced by exertion. It is possible that in the future radiography may be developed to such a degree that even incipient foci will show a definite shadow. At present the use of the *x*-ray gives us information of the presence of enlarged bronchial glands, not discoverable by any other means, and of diminished excursions of the diaphragm on the affected side.

It is evident that our diagnosis must take the form of conviction by circumstantial evidence, considering all positive factors and eliminating those which may be misleading. Our laboratory findings should be given full credit, but, above all, the history and examination of the individual should be our chief reliance in coming to a definite conclusion.

When we consider the alarming prevalence of this plague, and how much depends upon our diagnosis, affecting our patient's welfare and shaping his future course in life, the discussion of tuberculosis, instead of being considered as timeworn and tedious, should be a perennial subject of interest to any medical society.

A TALK ON OPSONINS AND THEIR PRACTICAL VALUE*

By HENRY L. ULRICH, M. D.

MINNEAPOLIS

The rise of the biochemical studies of the blood has given us a wonderful picture of ingenuity and persistence on the part of observers, and a dramatic, almost verging to a comic, scramble by their associates to verify or discredit their findings. With Behring's practical application of "antibodies" (called antitoxins) in diphtheria, the study of immunity and manufacture of antitoxins for all infectious diseases was attempted. Widal's agglutinating reaction in typhoid sent the biochemical world of medicine agglutinating, expecting to find for every infectious disease of known origin a measure for diagnosis and immunity. In both fields their restless energy was spent in the discovery of sporadic, isolated phenomena, and as a law of application in diagnosis, measure of resistance, and treatment the bac-

tericidal and antitoxic properties of the blood have been shown to be irregular and unreliable. I may add that to measure antitoxins is a difficult and crude task, involving animal experiment with all the appurtenances of an extensive laboratory and staff.

The two schools of medical pathology represented by the German and French—the humeral and cellular schools, respectively—have built elaborate theories as to the mechanism of response to infection. Ehrlich's theory of immunity is offset by Metschnikoff's able exposition of the part of the phagocyte in the mechanism of defense. Sir Almroth Wright, discarding the ultratheoretic evidence of both schools, turned his attention to phagocytosis and gave us a new concept in the mechanism of immunity, namely, *opsonins*.

In every infection we have the following

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phases involved: invasion, intoxication, reaction. (The same may be said to occur also on the part of the invader.) In the latter stage there are elaborated by the host the antitoxins, the bactericidins, and the opsonins. It is to the opsonins that Wright points as a constant measurable factor in the process of intoxication and resistance.

In the middle of the '90s Denys working on the immunity of the rabbit noticed that, whereas bacteriolytic substances were not increased in immunized serum, phagocytosis was much stimulated. Mennes, in 1897, noticed the same phenomenon working with the pneumococcus in the rabbit. In 1902 Leishman published his article "On a Method of Quantitatively Estimating the Phagocytic Power of the Leucocytes of the Blood." In 1903 Wright began a series of communications to the Royal Society which have continued up to to-day, elaborating a system of pathology, immunity, and therapeutics around his discovery and practical application of the opsonic phenomenon in health and disease.

For, as it was mentioned above, and it cannot be too strongly emphasized, since we are unable to measure in every infection the bactericidal and antitoxic powers of the blood, in the measure of opsonic power we have a constant and practical index of resistance and immunity, and therefore a guide to treatment and prognosis.

What are opsonins and to what use has Wright put them?

1. Opsonins are substances in the blood-serum which sensitize the invading organism, so that it may be ingested by the phagocytic leucocyte.

2. In infection specific opsonins are found which react only with the corresponding invader which has stimulated their origin.

3. The opsonic capacity of the blood can be measured and gives an index of resistance and immunity.

On these three points Wright has built up his system and given the world a wonderful series of observations. To prove his first contention, Wright has placed micro-organisms and leucocytes together in physiological salt solution. A slow, irregular phagocytosis occurs. This he calls spontaneous phagocytosis, and is comparable with the placing of leucocytes and inanimate and indifferent substances, like carmin or carbon particles, in physiological salt solution. There is a certain ingestion of particles by the leucocytes. If, on the other hand, leucocytes, a bacterial emulsion, and blood-serum are placed

together, an active and fairly regular phagocytosis occurs, the regularity of which depends very much on the uniformity of our bacterial emulsion.

To prove the second point, that specific opsonins occur, Wright has taken blood-serum or an infected individual and compared it with normal blood-serum for opsonic power. He then heats specimens of the same sera to 60° C, and again compares phagocytosis. In the heated serum of the infected individual there still remains some opsonic power; in the heated normal serum no phagocytosis occurs, or very small activity is shown. He thus proves not only specific opsonins, but their thermostable qualities.

It is for the third assumption, namely, that opsonic power can be measured, Wright has been showered by criticism and scepticism from all sides, and it is on his technic of the measure of the opsonic power that his philosophy stands or falls. The technic is omitted here, and the reader is referred to any up-to-date text-book of bacteriology. The technic is simple. The preparation of the parts involved takes time and attention. The sensitive nature of the reaction demands the utmost care and absolutely the same conditions for the experiment and the control.

In counting, the question of spontaneous phagocytosis comes up. When did spontaneous phagocytosis stop and opsonic phagocytosis begin? If the conditions of the experiment are the same, this point is of no practical value.

The avoidance of clumps in the bacterial emulsion and their ingestion in clumps making the count irregular and unreliable, has been a serious stumbling-block to many critics. Improved emulsions, and, when that is not possible, the avoidance of leucocytes which have ingested clumps, are advised. Since the same rule will apply to controls, the irregularities will be the same and thus relatively still will obtain. The agglutination of the reds by sera and also the agglutination of the bacteria in question can be avoided by selecting blood which will not agglutinate, and strains of bacteria which will have lost the faculty of being agglutinated. This can be done by heating tubercle bacilli to 100° C. and in cases of other bacteria by using attenuated cultures. Sometimes an organism will not be phagocytized. This is rare. In such cases a type of the same organism which has not immunized itself against the serum under observation must be found.

The question of how many leucocytes to count

to insure more accuracy has been brought up. Wright has had skilled counters at work, comparing the usual ratio of 100 leucocytes with that of 1,000, and he finds there is not enough practical difference to warrant the extra labor. Wright allows a measure of 10 per cent of error in counts. A skilled worker never varies more than 5 per cent. In ordinary blood-counts, such as R. B. or differential, that amount of variation is always found among observers.

PRACTICAL APPLICATIONS

Wright explains that in localized infections where the area is cut off more or less from blood- and lymph-streams the absorption of toxins is slow and regular. The opsonic index is usually below normal.

In diseases where the circulation to the part is excellent there is a constant ebb and flow of toxins into the general circulation and a corresponding ebb and flow of opsonic power.

In bacteremia the patient is bathed in a vacillating stream of toxins and antibodies, and the opsonic power exhibits constantly successive negative and positive phases.

It can be seen from the knowledge of the physiological hydraulics of a part involved, in cryptic conditions, such as joint, bone or visceral lesions, the use of the index can be of great value in diagnosis. For instance, in a case of suspected lung tuberculosis a specimen of blood is taken and the patient then advised to exercise until he is tired or out of breath. Six to twenty-four hour later another specimen of blood is taken. A difference in the readings of the indices is a definite indication that lesion is present. Hyperemia induced by Bier's method, by massage, by active or passive motion of joints, is the method used to give us the auto-inoculation necessary for a difference in the reading of the index.

In differential diagnosis between tuberculous and gonorrheal joint, typhoid and acute tuberculosis, typhoid and paratyphoid, also infections from the various pyogenic organisms, the index has been called into use.

In the treatment of tuberculosis, whether rest or activity of joint or body is indicated, can be easily ascertained by the comparison of indices before and after a trial.

I would like here to digress somewhat to call attention to the novel treatment of tuberculosis by means of graduated exercise. In Surrey County, England, about two and one-half miles out from Frimley Station, stands a low white building in the shape of a Maltese cross, so

turned to the zodiac that all its wings receive the maximum of sunshine. Framed in its verdure of pine, which sings in the wind like the boom of a sea, its glistening white aspect and its well-groomed lawns invite the visitor's keen interest. Off to the left one sees figures of men flitting in and out of the edge of the woods, and on approach they are seen to move more or less in groups. One constitutes the "basket brigade" carrying sand from a pit to a pile some distance away; another is armed with small shovels very much like the size children use at the seashore—this group is loading baskets or filling a cart with sand. A third is armed with larger shovels of adult size, and this group also is loading the cart or mixing mortar. A fourth is impatiently awaiting the tug on the long rope attached to the cart, which must be pulled up an inclined plane. These workmen are consumptives building a reservoir. To the right of the reservoir is a long shack, once a "liege halle," now turned into a carpenter shop, a forge, and a shoe-mending shop. Here also men are industriously working, humming their work-a-day song. Truly, never have I seen a happier band of workmen. Some seventy men are engaged winning themselves back to health, strength, and economic usefulness. In the low white building only two beds were occupied by invalids. "Been there for weeks," was the laconic observation of Dr. Patterson. "If patients do not reduce their temperature within two to four weeks of absolute rest in bed, there is no use of resting them any longer—a waste of time for patient and institution." This pioneer and iconoclast of tuberculosis treatment has actually worked out a system which, when explained by Wright's method of observing indices, becomes as rational as the giving of digitalis to an engorged heart.

For several years he has put afebrile cases on graduated manual labor, noting its effect on the temperature and using it as a guide. He was puzzled to know why some stood still; why others progressed following an indiscretion in exercise, as shown by symptoms and temperature. It was shown by the index that these patients were giving themselves daily auto-inoculations; that in those cases which were "marking time" a judicious overdose of exercise, followed by rest, produced the efficient auto-inoculation, with its corresponding rise in immunity, to place the patient in the next class of heavier work. It can be seen that Patterson now appeals to the index in cases of indecision and to explain the paradoxes which this treatment and the ordi-

nary symptomatic observances might suggest. Thus the observation of the index materially aids by shortening the length of treatment and increasing the sphere of usefulness of the sanatorium.

Before Wright had worked out opsonins he had been using bacterial vaccines in the treatment of local skin infections, such as acne, pustules, boils, carbuncles, etc. By observing the result of vaccinations on the opsonic power of the blood he has been able to graduate the dose and period of inoculation. He has extended these observations to infections due to the bacillus of tuberculosis, neoformans, typhosis, catarrhalis, influenza to the gonococcus, meningococcus, and pneumococcus.

To conclude, Wright's conception of opsonins and his ability to measure them have given us a rational explanation and indication of the use of rest and exercise in disease. He has explained the factors involved in Bier's hyperemia; why massage or active or passive motion may or may not bring results.

He has given us the length of intervals in the use of bacterial vaccines and standardized our doses. You will recall, he was the first to emphasize that in the use of tuberculin the preva-

lent dosage was too large, and that it was too frequently given. He has opened up to the internist a new method of diagnosis, and sent a warning to the surgeon that in the future he must practice surgery based not only on pathology, but on physiology as well; that in all operative procedures against infected foci the resistance of the patient can be measured; that there is a time when and when not to operate; and that in chronic suppurative processes, no matter how high one may increase the immunizing properties of the blood, if the area is walled off from the blood-stream, no curative response is possible.

The field of usefulness of this concept and its application has only been entered, and to say just how far it extends and what its boundaries will be in future medicine and surgery is impossible.

Already one feels the influence in the daily bedside discussions. New terms, new points of view, new attitudes based on the biochemical knowledge of the blood, are seen on every side. One has only to watch the great manufacturers of drugs of this country to see the evidences of the new era in medicine.

MEDICAL INSPECTION IN THE PUBLIC SCHOOLS

By M. J. ABBEY

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MAYVILLE, N. D.

Those of us who live in the great Northwest believe that our educational system is among the best. Unhampered by tradition, we have been able to try new devices, retain those that have proven effective, and eliminate those that were not the best. That this is true to a greater extent in the states known as the Northwestern States none of us doubt. There is, however, a phase of our educational system that has been neglected. The teacher's qualifications have been raised, better salaries are paid, the courses of study have been revised, and many other devices employed to make the teacher's work more effective. All these are necessary to a successful educational system, but the subject for which all this is done—the child—should receive its proper attention. The methods of presentation may be excellent, but if the child is not receptive, the results are meager. The physical condition of a child bears a very close relation to his capacity for

mental training. If his attention is directed toward certain physical ills his mind is unable to perform its normal function; it is not receptive and soon becomes even sluggish. It is safe to say that most children enter school life endowed with abilities that do not differ in any marked degree. Soon, however, a difference is noted. The change from the free out-of-door life of the home to the more confining life of the school makes inroads upon their health. As a result their sight and hearing become defective. The teacher's knowledge is limited to the fact that the child is not doing satisfactory school-work. The question arises, Shall an effort be made to determine the cause of this failure, or shall the child be permitted to plod on for a few years and finally drop out of school? It is unreasonable to expect a child to continue in school for any length of time when he is not making any noticeable progress. Unable to cope with his

companions in the classroom or upon the playground he soon falls by the wayside. The writer contends that every possible effort should be made to determine to what extent these unfortunates can be relieved.

Figures are dull things, but it is often necessary to employ them to make an argument more conclusive. In New York city last year 26,435 children were reported as having defective eyesight. At the Centennial School, Trenton, N. J., it was found, after a careful examination, that 82.2 per cent of the children were far-sighted, and 8.1 per cent were near-sighted. Dr. Matais, of Angers, France, says that myopia is hereditary, and that he found it existing in 116 families out of 330. Of 110 Normal-School pupils who were examined by the writer, less than 20 per cent had normal vision. An eminent authority states that 80 per cent of the school children suffer from eye, ear, nose, or throat trouble, which can be cured if the proper attention is given to them in its early stages. Many more and interesting facts might be cited to prove the need of more careful attention to the physical welfare of school children.

That the above condition can be traced directly to our school system is shown by the following facts: Among people where children spend but little or no time in school, their sight and hearing are most keen. Only 78 in a total of 2,000 Mexican children, who were examined, were found to have abnormal sight. Recently an examination of several hundred negro children in the South was made, with results that did not differ to any extent from those found in Mexico. Each grade in school shows more cases of myopia than the preceding grade. This leads us to believe that as the child advances in his school work he is subjected to more harmful influences, and, as a result, the disease known as myopia develops.

The direct causes which bring about this unfortunate condition are many. The first that I would mention, and one which may contaminate an entire school, is permitting children to return to school too soon after they have had a contagious disease. They use the same towel, wash-basin, and soap that are used by the other children. The eye, being a very sensitive organ, acquires a contagion which permanently affects it. Furthermore, school buildings are often not constructed for the comfort and health of the occupants. Poor

light, improper ventilation, unsanitary plumbing, desks that do not fit the pupil, poor arrangement of the blackboards, poorly printed text-books, and many other influences contribute to bring about defective sight and hearing. If our school system taxes the normal child up to the limit of his capacity, what can be expected of the abnormal child? If a child enters school when he is five years of age, he is expected to finish the eighth grade when he is fourteen. All are put through the same mental mill, and all are expected to come out at the same time and with the same equipment. Mental capacity and physical condition of the subject have but little to do with what is expected of the teacher. The teacher's ability is often judged by the number who finish her particular grade within a stated time. In the struggle to be promoted many suffer who are unable to bear the burden. A personal instructive system would do away with many of these evils. In such a system the child and not the class would be the unit. Mental capacity and physical conditions would receive their proper attention. However, conditions are otherwise. The results of our educational systems are far from what they should be. More than 50,000 children are compelled each year to leave school because of some physical defect which renders them unfit for school work. This does not take into account the large number who remain in school, but are not accomplishing enough to make their stay profitable. Add to this the large number who may be classed as truants, who eventually, of their own accord, drop out of school, and then consider what this means to society. An army of young people growing up in ignorance, hampered on all sides, unable to cope with those in the better classes of society—they turn to crime and pauperism. Education opens up many avenues of usefulness. The lack of it shuts many doors to every-day opportunities. Education and usefulness, ignorance and crime, seem to go together. Defective sight and hearing are most common among criminals. The satisfaction that an education brings, is reward enough to warrant us in making it general. Society as a whole is benefited.

It is not a difficult matter to point out errors in existing institutions, but the real difficulty is in proposing remedies.

The first remedy that I would suggest deals with the school building itself. It should be

constructed with due regard to the comfort and health of the pupil. Body and mind are coördinate.

The second remedy is a system of examinations whereby physical defects are ascertained in their early stages. No doubt, in such a system a regular physician, whose duty it is to examine each child at the beginning and middle of the school year, would be the most effective. A medical certificate showing that the holder has a clean bill of health would be a safeguard to many of our school ills. Such a system would be quite ideal. The drawback to this system is its expense. Admitting this, the writer believes that most city and town schools can overcome the difficulty and engage each year a school physician. A more simple method, and one that is employed in many of the schools of this state, is to give instruction in the normal schools and teachers' institutes, which will enable the teachers to examine the eyes and ears of children in their schools. Vision-charts are published by most optical houses. These cost but a few cents and will enable a teacher to conduct a successful examination. The chart published by F. A. Hardy & Co., of Chicago, is one of the best. The writer has seen many inexperienced teachers use this chart and secure excellent results. Parents are only too glad

to learn that their children need to consult an oculist or physician. The burden upon the teacher is slight, while the results are far-reaching.

The third remedy. The writer advocates a more elastic school system. Work with the hand, eye, and ear should alternate. Perhaps it may be necessary to dispense for a time with work which employs one of these organs. Our school system should provide other work for the child, which will enable him to continue his course without a loss of time. A constant use of an organ tends to weaken that organ.

The responsibility of school officers for the children is great. Is everything being done that can be done to lessen the large number who are leaving school with only a meager education? Education is the most valuable asset that we have. A lack of it means poverty, insanity, weaklings, and crime. I do not wish to detract from our excellent school system, but we are behind our sister states in this one respect,—the medical attention that we are giving our school children. It is the duty of every physician, school officer, teacher, and parent to insist upon more careful attention to this important branch of our educational system.

AN OPERATION FOR HERNIA, FOLLOWED BY THE AMBULATORY TREATMENT*

BY A. E. BENJAMIN, M. D.

MINNEAPOLIS

Hernia in its various forms is one of the most common surgical diseases. A disease which is not accompanied by pain or disability is often neglected, and unless patients afflicted with hernia are actually suffering pain or are incapacitated for work or for participating in the pleasures and pastimes of life, they frequently avoid the doctor. There have been so many apparently satisfactory appliances worn to retain a hernia, restoring the patient to a condition whereby he may be able to continue his usual vocation, that a truss-fitting establishment is sought out before a physician or surgeon is consulted. The excuses offered by a patient for not seeking the advice of a

surgeon and having an operation performed are about as follows:

1. He does not have time to be idle while the union is taking place for an operation.
2. He does not feel like spending the money for the fees of the hospital and the surgeon.
3. He is prejudiced against hospitals and does not want to leave home.
4. He is doubtful about the results, because of knowledge of other patients operated upon without success, some of whom had infection, followed by prolonged and expensive hospital treatment.
5. He dislikes very much to stay in bed the usual time following an operation for hernia.
6. He knows that he can continue his work

*Read at the 40th annual meeting of the Minnesota State Medical Association, held at St. Paul, October 6 and 7, 1908.

by getting a truss, and so he puts off the operation on that account for a more convenient time.

7. He may dislike, or is actually afraid, to take an anesthetic.

8. He may be also afraid of the pain and suffering connected with an operation.

All these excuses, together with the fact that the patient is not suffering and is easily fitted with a truss, cause many to keep away from the surgeon.

If we can assure patients that they can have an operation without much hospital expense and with but few days of rest in bed, and that they may get about the house in a few days and superintend some of their business affairs, and can also assure them that the cure will be complete, with little or no pain, a greater proportion will follow the course for the radical cure.

The ambulatory treatment has been instituted following abdominal and other operations by a number of surgeons throughout the world, but very few have allowed their patients to be up and about continuously, following an operation for hernia. In 1903 the author read a paper before the Western Surgical and Gynecological Association, in St. Joseph, Missouri, on "Oblique Inguinal Hernia." In this article the operation was described as follows:

An ordinary incision for a Bassini operation is made. The aponeurosis of the external oblique is slit up to the point opposite the internal ring. The fibers of the internal oblique and transversalis muscles are divided by blunt dissection, thus opening the inguinal canal. The internal oblique and transversalis muscles are found closely connected. They are not separated, but the aponeurosis of the external oblique is carefully and thoroughly removed from the internal oblique. The lower portion is dissected down to Poupart's ligament and the transversalis separated from the peritoneum. Such careful dissection and positive identification of structures shows any deficient development and is an important help in securing direct apposition and firm union. The cord is now raised and silkworm-gut sutures are introduced to the outer side of the incision, passing through the skin, Poupart's ligament, the internal oblique and transversalis, on the inner side of which the loop is made. The needle, re-entering the transversalis and internal oblique, passes through Poupart's ligament and comes out through the skin to the outer and lower side of the cut, near the point of entrance. (Fig. 1.) From three to five sutures are similarly introduced. These sutures pull the internal oblique and transversalis below the shelving edge of Poupart's ligament, and are observed to make a firm barrier against any internal force. A double support is formed and any defect is corrected. The sutures are then tied over

rolls of sterilized gauze. (Fig. 2.) The spermatic cord then rests on the internal oblique. The external oblique is then closed over the cord.

This may be done with fine continuous chromic catgut sutures which also overlap the tissues. The skin incision may be closed with a similar suture. I frequently make a Ferguson incision in these cases and often do not transplant the cord.

Figure-of-eight silk-worm gut or catgut sutures to approximate the external oblique, Poupart's, and the skin-line are occasionally used, especially where considerable oozing is present. These sutures are then tied over a long gauze roll. (Fig. 3.)

At the time I described the above operation I did not advance other important reasons I now present for its continuance, namely, that patients are able in a few days to get out of bed with little discomfort and no danger of a recurrence.

The overlapping of the tissue produced by this operation offers no opportunity for the peritoneum to wedge its way along the spermatic cord. The elastic gauze cushions take off the direct pressure and strain on the tissues through which and upon which the sutures rest, avoiding that characteristic stitch-like pain from the strain on the sutures in moving about. The manner of placing the U sutures prevents any strangulation of the tissues, and firmly approximates them whereby they can quickly and firmly unite, gaining a blood-supply readily by their close contact. When the figure-of-eight sutures are used for the external oblique they pull the fascia away from the cord, giving the proper amount of room for this structure in the Bassini operation. There is less bleeding or subcutaneous or inter-muscular oozing on account of this close approximation of the structures. The ordinary manner of placing sutures often strangulates the tissue, more exudate occurs, and infection is more likely to result. By this operation the support is brought in a position where it is most needed, namely, next to the peritoneum. The majority of individuals get about at once after the operation.

In a series of cases operated upon during the last two years, I have demonstrated the efficiency of this mode of treatment. There have been no recurrences, and a greater number of patients have been persuaded to have

operations for the reasons above stated. I have tried to use chromic-catgut sutures in the same way, but have found in a number of cases, especially fat individuals, that the sutures quickly weaken at the skin-line and do not hold sufficiently long. I have also tried the buried chromic catgut and have found that some sutures in certain individuals last from two to four months causing irritation necessitating their removal.

CONCLUSIONS.

1. The manner of placing sutures avoids any strangulation of the tissue.
2. Hemorrhage or oozing is less noticeable and drainage less necessary.
3. The parts are closely and broadly approximated, forming rapid blood-supply and quick union.
4. The ambulatory treatment can with less pain follow this operation, and continue, not being interrupted by a stay in bed at the suture-absorptive period.
5. There is no necrosis from tight sutures, therefore few, if any, stitch abscesses.
6. The gauze rolls act as elastic cushions, which prevent scars and irritation of the skin.
7. The operation completely closes the breach and makes a firm wall.

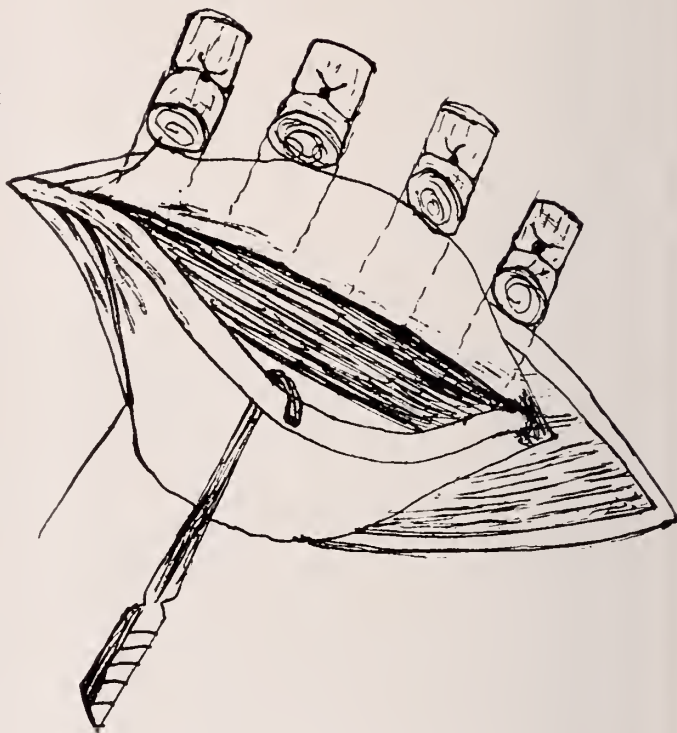


Fig. 2.

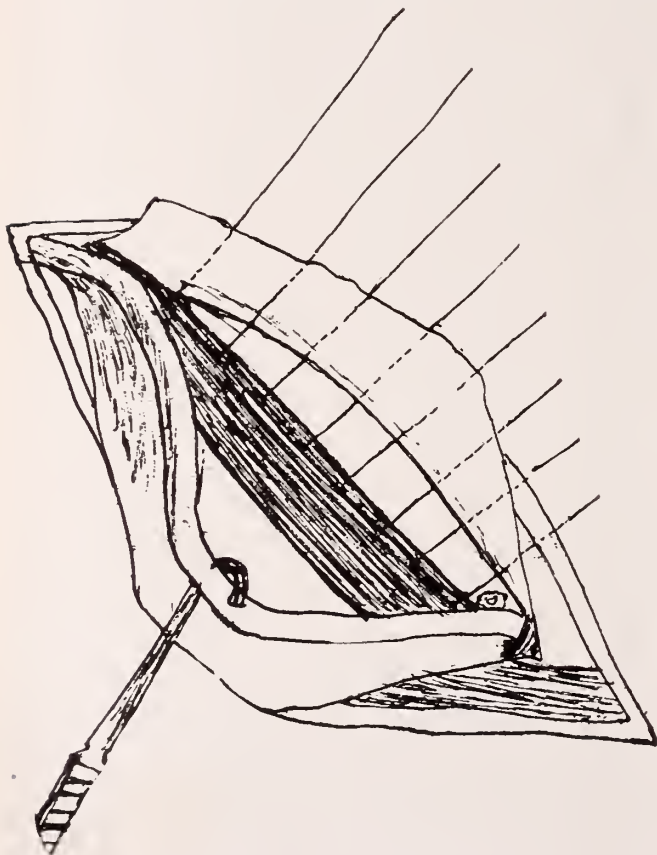
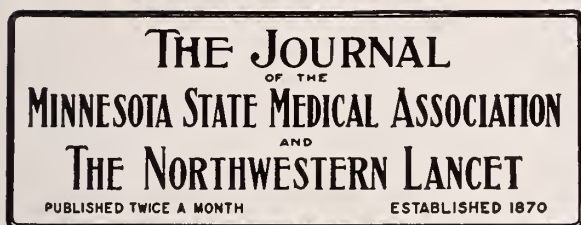


Fig. 1.



Fig. 3.



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DECEMBER 15, 1908

SECOND NOTICE

We again urge the secretaries of all Minnesota medical societies to have the report of the Committee on Medical Defense thoroughly discussed at the January meetings.

As we said before, such action on the part of the local societies will form a valuable precedent, and may avoid hasty and ill-advised action by the House of Delegates upon much more important matters. It will also tend to add greatly to the efficiency of the State Association, for no delegate body can carry forward work much in advance of the consensus of opinion of a large majority of such body, and this can be obtained in no other way than by reference to the members of all measures requiring their endorsement to make such measures effective.

THE WESTERN SURGICAL AND GYNECOLOGICAL ASSOCIATION MEETING

The medical men of Minneapolis extend cordial greetings to the members of the Western Surgical and Gynecological Association, whose eighteenth annual meeting will be held in this city on the 29th and 30th of this month.

The Association has a membership of 146, representing eighteen states, extending from Ohio, on the east, to the Pacific coast. It is safe to say that there is not a representative man in either special line embraced in the work of the organi-

zation who is not a member, while the small number of members clearly shows that the qualification for membership is placed high.

We believe it is the custom of the Association to invite to its meetings such members of the profession as are especially interested in its line of work.

This will be the second meeting of the Association in Minneapolis, the first meeting having been in 1900.

The president this year is Dr. W. W. Grant, of Denver, a man who has been in practice forty years, and still retains all the enthusiasm of youth and still keeps step with the progress of surgical science. Dr. Grant enjoys the unique distinction of having done the first operation for appendicitis ever performed in this country or abroad. Dr. Arthur T. Mann, of our city, is the secretary-treasurer, and to his efficient services much of the success of the Association is due; and we believe this statement may be said of any society whose secretary possesses the requisite qualities, which are, at least, a trained mind, enthusiasm, courtesy, and executive ability.

GATES ON TRIAL

Gates, the advertiser, the vital science expert, the all-round doctor, the man who cures incurable diseases, who exacts large fees in advance and who treats by laying on of hands and by suggestion, was on trial before the district court last on the charge of obtaining money under false pretences. The trial brought out many interesting things, showing mainly the difficulties in presenting evidence and prosecuting a charlatan.

Gates claims to be a graduate of many schools, but on cross-examination he admitted that his attendance upon lectures, given by faddists, were few and far between. He has the gift of advertising, or at least has a good advertiser, but on his cross-examination he forgot that he ever advertised in the newspapers. He claimed, however, to be able to cure Bright's disease, dropsy, consumption, and valvular heart-disease by his unique methods. To bolster up his reputation as a man, he had his landlord, the man who insures his life, and his attorney, who said Gates cured him of some disease. He also had two physicians, one a member of the regular school of medicine and another a member of the homeopathic school of medicine, who testified in his behalf, and the opinion of these men, including Gates, was that the man whom he

treated had contractures in his lower extremities due to a disease of his cervical vertebræ. The State called two or three physicians who had previously examined the unfortunate patient, and they all testified that he was suffering from an incurable and hopelessly diseased state.

The trial judge kept the prosecuting attorney strictly within the lines of his case, and did not permit the introduction of enough medical evidence to disprove the statements made by Gates and his cohorts while on the stand.

The conviction of such a character would be of great good to the community. It would not only teach the people that these men are unsafe, but that they are unreliable and untrustworthy. It would educate them to a higher knowledge and a broader view of the field of medicine, but conviction seems quite impossible.

It is quite true that the medical profession is more or less responsible for the existence of these quacks, first, because the medical man is not always as well educated as he should be and does not recognize disease, nor does he know how to treat it. Then, too, many physicians look upon many conditions in patients as of minor importance and do not recognize the necessity of treating the body through the mind. Hence, these discouraged neurotics and disgruntled critics drift into the hands of quacks and faddists.

The newspapers, of course, did not publish a report of Gates' trial, because he is a generous supporter and a liberal advertiser. Hence, it would be undignified, from their point of view, to make comments upon the trial of such a man.

The result of the trial was unfortunate, but it should not discourage the prosecutors or those who are interested in the suppression of charlatanism.

The only possible way to rid the community of such vipers is to continually hold them up before a court of justice or, better perhaps, to educate the people and to educate the doctors.

As long as the world lasts, there will be more or less contention among medical men of all sorts, and the people are still willing and will always believe in the impossible and will always look for the unattainable.

Gates was acquitted.

THE NEEDS OF THE STATE BOARD OF HEALTH

The Minnesota State Board of Health will ask the coming legislature for an increased appro-

priation to meet its absolute needs. For some years the Board has been hampered by a lack of funds and has had to draw upon the general fund, which amounted last year to a little more than \$13,000, for various special expenditures and for laboratory purposes. This year the Board proposes to ask for specific sums for specific departments; for instance, for the General Fund this year the Board will ask \$10,000, and for the Vital Statistics Fund, which has been very much reduced in the last three years, the Board will ask a special appropriation of \$7,000, and for a Special Vital Statistic Fund of 1909 they will ask an additional \$3,000.

This department of the State Board of Health has been very much neglected, and it has been almost impossible to keep in touch with the statistics of Minnesota, and unless these two funds can be secured, Minnesota will still be among the unregistered states.

For communicable diseases the Board will ask \$5,000. When one considers the number of communicable diseases and epidemics that sweep over Minnesota, this amount is not very large. The control of epidemics and the incidental expenses that must accompany such investigation and suppression, mean a different amount of money to be expended.

The Pasteur Institute, which has been so successfully conducted this year, will ask for its usual appropriation of \$5,000. Something like 220 cases of rabies have been treated in the Pasteur Institute since the opening, fifteen months ago, and the amount of money saved to the citizens of Minnesota by having an institute at the Public Health Laboratory building, in money value, is worth about \$44,000, but no one construes really the saving to the State.

The General Laboratory Fund will ask for \$15,000, and \$2,500 for a Special Laboratory Fund for 1909. This means establishing laboratories in other parts of the state. Duluth has already a laboratory, but it is practically under the control of the city of Duluth, and, on account of the appropriation from the city and county, it has been impossible to extend its work beyond certain limitations. With this new appropriation the State Board could found other laboratories in other parts of the state and in this way save time and expense, as well as cover a larger field in a very satisfactory manner.

An Engineering Fund of \$10,000, which covers the needs of the Engineering Department and secures the services of expert sanitary engineers who can go from place to place and ad-

wise or inspect new engineering projects, is absolutely essential.

A Special General Fund, also for 1909, of \$4,000 will take care of much of the work in the office, as well as provide for emergencies and such other necessary expenditures as may go properly in line with the work of the State Board.

Some of these figures may be increased at the next meeting of the Board of Health, and the whole appropriation asked for, for 1909, will be approximately \$75,000. This may seem rather a large sum, but when one compares it with the expenditure in the large cities of Minnesota, it is altogether inadequate; for instance, the city of Minneapolis spends in the neighborhood of \$110,000 a year on its Health Department; the city of St. Paul, a little less than \$100,000 a year; and Duluth spends a corresponding amount according to the population.

In the East, the legislatures are educated to the needs of the health departments, and they unhesitatingly give the state boards of health large sums of money; for instance, Pennsylvania spends about \$2,000,000 a year; Massachusetts, \$1,500,000; and the city of Boston alone, which is only twice the size of Minneapolis, spends \$800,000 a year in its Health Department.

These appropriations can be secured only by educating the legislator to the needs in his own community. If the proper argument is brought to bear, he will see the necessity of it, for there are many flagrant instances where health departments and health officers need money for improvements and general sanitation in the small towns throughout the state.

The complaints that come into the State Board of Health of indifference on the part of communities exposed to bad hygienic surroundings are so numerous that it is sometimes impossible to give them the proper consideration.

The day is coming for considering the pollution of waters, and the attempt to clean up the Mississippi River will be imperative. This will require the expenditure of a large sum of money, but it cannot be done unless the people appreciate the situation keenly and are willing that the state funds shall be used for the benefit of the public health.

In all probability the state of Minnesota will be called upon to appropriate large sums of money at the next legislative meeting, and it is to be hoped that the physicians will do their part of the work in enlightening the people and, par-

ticularly, their representatives, in the expenditure of large sums for good purposes.

REPORTS OF SOCIETIES

FREEBORN COUNTY SOCIETY

A semi-annual meeting of the Society was held at Albert Lea on Nov. 24th, with fourteen members present.

Dr. W. L. Palmer, of Albert Lea, presented a paper in the form of "A Talk on Consultation."

The annual dues were raised from \$2.50 to \$4.00, the same to be paid on or before March 15th.

O. E. RODLIE, M. D., Secretary.

WASHINGTON COUNTY SOCIETY

The Society met at Stillwater on Nov. 10th with ten members present.

Dr. Frederic Leavitt, of St. Paul, read a paper on "Some Observations Based on Fifty Confinement Cases." The paper was followed by a general discussion and the citation of cases.

The Society indorsed the movement for the establishment of a national health department.

F. G. LANDEEN, M. D., Secretary.

CENTRAL MINNESOTA SOCIETY

The Society held its annual meeting at Mora on Nov. 24th.

Papers were presented as follows:

"The Treatment of Pneumonia," by H. S. Bacon, M. D., Milaca.

"Surgical Treatment of Lung Abscess, Gangrene, and Empyema," by H. S. Cooney, M. D., Princeton.

These papers were discussed by Drs. W. S. Titus and A. J. Lewis.

The following officers were elected: President, Dr. W. S. Titus, Mora; vice-president, Dr. S. H. Olson, Milaca; secretary-treasurer, Dr. A. J. Lewis, Mora; censors,—Dr. O. W. Sterner, Cambridge; Dr. R. B. Hixson, Cambridge; Dr. O. S. Swennes, Lawrence; delegate, Dr. A. L. Lewis, Mora; alternate, Dr. H. C. Cooney, Princeton.

A luncheon and a smoke-social followed.

A. J. LEWIS, M. D., Secretary.

HENNEPIN COUNTY SOCIETY

A mid-monthly meeting was held November 23rd, the president, Dr. F. A. Knights, in the

chair and forty members present.

Dr. E. S. Strout presented specimens of adenoids and Barnhill's curette.

Dr. J. G. Cross made a report for the Milk Committee. The discussion of the report was opened by Dr. P. M. Hall, Commissioner of Health, and entered into by Mr. McCall, milk inspector, Dr. L. W. Day, Dr. W. H. Condit, Dr. C. J. Pratt, Dr. H. W. Cook, Dr. S. M. White, Dr. J. C. Litzenberg, Dr. H. M. Bracken, Dr. J. P. Sedgwick, Dr. C. A. McCollom, and Mr. Jno. Irwin, a large dairyman, the discussion being closed by Dr. Cross.

A regular monthly meeting of the Society was held on December 7th. Dr. F. A. Knights, the president, in the chair and forty-five members present.

Dr. C. N. Spratt presented two cases of injuries of the eye.

Dr. C. A. Donaldson presented a case of tuberculous adenitis.

Dr. S. M. White reported a case of trichinosis.

By a unanimous vote Dr. Wachter was extended the privileges of the Society during his stay in the city.

It was moved and carried unanimously that Dr. H. H. Kimball be extended the thanks of the Society for his generous gift for the purchase of chairs for the Medical Library and we wish further to assure him of our full appreciation of his generosity.

It was moved by Dr. S. M. White that the chair appoint three members to act as a Milk Commission.

Chairman of the Committee on Medical Inspection reported:

Dr. W. A. Jones, chairman of the Committee on Medical Inspection, reported with reference to plan of proposed medical inspection in the Minneapolis public schools, as follows:

That for the coming year fifteen schools be inspected.

That a corps of ten physicians be employed for such work.

That he is of the opinion that the work of medical inspection in the fifteen schools can be completed in three months.

Recommends that a follow-up system of nursing be instituted.

That four nurses be employed for such purposes, and to assist the medical inspectors in the tabulations of records, etc.

Recommends that the physicians be paid \$250.00 for the three months.

That four nurses be employed at a salary of \$60.00 per month each.

That as many women physicians be employed as possible.

That the part of the duty of the medical inspectors shall be to give lectures and instructions once each month on the subjects of sanitation and hygiene.

That the medical inspectors be instructed to inquire into the sanitary condition of school buildings, and report to the Board any defects which may exist; and also to give suggestions to the Board in the matter of sanitation of new buildings.

That the medical inspection system be called the Department of Hygiene.

The report was adopted and the committee discharged with thanks.

Dr. C. G. Weston reported for the Committee on Revision of the constitution and by-laws.

The constitution and by-laws were read with the proposed amendments.

The Censors having reported favorably, the following candidates were elected:

Dr. Robert R. Rome, 802 Andrus Bldg.

Dr. Robert Ray Knight, Pillsbury Bldg.

Dr. Albert H. Parks, 804 Pillsbury Bldg.

Dr. Minor Morris, Hopkins, Minn..

Dr. H. G. Lampson, 610 Donaldson Bldg.

The names of the following physicians were duly proposed for membership:

Dr. H. B. Annis, 602 Donaldson Bldg.

Dr. L. A. Rexford, 53 Syndicate Blk.

Dr. Jno. H. Morse, 608 Donaldson Bldg.

Dr. Carl M. Roan, 206 22nd Ave. So.

Dr. L. M. Crafts introduced a resolution which was referred to the Executive Committee.

The following members were placed in nomination for the ensuing year:

For president, Dr. J. G. Cross, Dr. J. D. Simpson, and Dr. C. A. Donaldson; for first vice-president, Dr. J. Frank Corbett; for second vice-president, Dr. E. S. Strout and Dr. H. W. Jones; for secretary-treasurer, Dr. C. H. Bradley; for librarian, Dr. C. N. Spratt and Dr. J. P. Sedgwick; for Executive Committee, Dr. J. P. Sedgwick, Dr. A. S. Hamilton, Dr. J. W. Bell, Dr. E. S. Strout, Dr. J. A. Watson; for Censors, Dr. R. J. Hill and Dr. L. A. Nippert; for Trustees, Dr. H. H. Kimball and Dr. W. A. Hall; for Delegates, Dr. W. A. Jones, Dr. J. Clark Stewart, Dr. H. L. Staples, Dr. J. Hvorslef, Dr. J. W. Bell, Dr. L. A. Nippert, and Dr. A. T. Mann; for Alternates, Dr. L. M. Crafts, Dr. E. R. Hare, Dr. R. E. Farr, Dr. C. A. Read, Dr. W. M. Chowning and Dr. Geo. E. Benson.

Upon motion the scientific program was postponed to December 21st.

C. H. BRADLEY, M. D., Secretary.

NEWS ITEMS

Dr. O. A. Thorvaldson, of Iowa, has located at Denbigh.

Dr. A. M. Thomas has located in Sherbrooke, N. D.

Dr. W. W. Johnston has returned to his old practice at Geneva.

Dr. C. O. Estrem, State University, '07, has located in Madison, S. D.

Dr. J. P. Rathbun has moved from Faulkton, S. D., to Wecota, S. D.

Dr. Joseph W. Kelley, of Hudson, Wis., died on Nov. 30th, at the age of 38.

Dr. Alfred Chadbourne, of Kramer, N. D., is doing post-graduate work in the East.

Dr. Frederick Barrett has moved from Eveleth to Gilbert to become associated with Dr. Harwood.

Dr. A. M. Fisher, of Underwood, N. D., is in Chicago doing post-graduate work, and it is in plain medicine.

Dr. T. M. MacLachlan, of Bismarck, N. D., has been appointed physician to the Indian school at that point.

Dr. C. L. Chambers, of Bismarck, N. D., has found a bride in Detroit, Mich., and will resume his practice on Jan. 1st.

Dr. W. F. Coon, who formerly practised at Elysian, has located in Minneapolis, with offices at 1502 20th Ave. North.

Dr. Peter A. Boyum, State University, '07, has located in Parkers Prairie and entered into partnership with Dr. Verne.

U. S. Contract Surgeon J. S. White, who has been stationed in the Philippines, has resigned and will locate in St. Paul.

The hospital conducted by the Benedictine Sisters at St. Michaels has been obliged to close up for lack of financial support.

Dr. Ferd Graenz, of Menahga, is home from a special course in eye, ear, nose, and throat work, which he has been taking in Chicago.

Dr. J. A. Judg, of St. John's Hospital, Moorhead, has formed a partnership with Dr. E. W. Humphrey and will do general practice.

Dr. E. H. Blyea, of Williston, N. D., who has had considerable trouble in his profes-

sional work, will move to Kansas City, Mo.

Dr. E. V. Goltz, of Graceville, is in Chicago doing post-graduate work. He will spend several months in eye, ear, nose, and throat work.

Dr. Edward E. Collins, of Duluth, died last month at the age of 75. Dr. Collins practiced in Minnesota for forty years, thirty of which were in Duluth.

The Goodhue County Medical Society has requested the local papers not to mention the names of physicians in connection with reports of cases made by the papers.

Dr. A. G. Chadbourn, who recently sold his practice at Kramer, N. D., will spend considerable time in Philadelphia in surgical work, and may locate in Redwood Falls, his old home.

Dr. C. H. Bradley, the secretary of the Hennepin County Medical Society, has been chosen by the Minneapolis Board of Education to take charge of the medical examination of the Minneapolis school children.

Dr. J. S. Collins, of Atkinson, Ill., has located in Spring Grove and formed a partnership with Dr. F. E. Murphy. The firm will conduct a hospital, using the building formerly occupied by the Caledonia Hospital.

The Commercial Club of Coleraine, the new and big mining town, recently appointed a committee to select a site for and lay out a cemetery. The committee consisted of a physician, a druggist, and an undertaker.

The Western Surgical and Gynecological Association holds its annual meeting in Minneapolis on Dec. 29th and 30th. The meeting will be held in the rooms of the Hennepin County Medical Society, and the banquet will be given at the Minneapolis Club.

A North Dakota "Dr." who has moved into new pastures at Washburn, in that state, announces that his methods include "osteopathy, chiropractic, magnetic, manipulatory, Swedish movement, massage, etc. All chronic cases treated." If these things, including *etc.*, will not cure chronic cases, pray what will?

Dr. P. G. Artz, of Fingal, N. D., has moved to Jamestown, and will become associated with Drs. Rankin and Gerrish. Dr. Artz' practice at Fingal will be taken up by Dr. Vandiver, of Carrington, and Dr. O. W. McClusky, of Cleveland, will take Dr. Vandiver's practice.

FOR SALE OR TRADE

A static and x-ray machine with all accessories including x-ray tube; all in first-class condition. Will sell for \$75.00 or trade for a good microscope. Address J. A. Hohf, M. D., Tripp, S. D.

FOR SALE AT HALF PRICE

A practically new x-ray and static machine, with or without an alternating electric; one-third horse-power motor. The best machine on the market; never out of order. Address A. C. Tingdale, M. D., 303 Donaldson Bldg., Minneapolis.

AUTO FOR SALE

A Ford auto; used only four months; as good as new. A 3-seated, 18-horse power, 1908 machine. Hardly a scratch on varnish or tires; full top; drop glass front, oil lights, large gas lamps, and tools. Has had no accidents and needs no repairs. Will guarantee its condition. Address H. C. K., 2294 Commonwealth av., St. Paul.

PRACTICE FOR SALE

A well-established practice in a fine central Minnesota town of 1,200, surrounded by a thriving German and Scandinavian community of well-to-do farmers. Sale to include a small, centrally located modern home, at a sacrifice. Going to specialize. Address L. R., care of this office.

PRACTICE FOR SALE

I desire to sell or lease, unopposed location in Minnesota; good rich territory; Germans, Scandinavians and Americans; three hours' ride to Twin Cities; town of about 400, centrally located; an ideal place for any

doctor who can attend to general practice; English spoken generally; good graded school and churches. A doctor, young or old, who can also buy drug-store and stock, (\$3,000 deal, cash and time), can make money. Satisfactory reasons for selling. If you want such, address R. N., care of this office.

PRACTICE FOR SALE

\$3,600 will buy general practice in good live S. D. town; splendid field; nearest doctor 40 miles in one direction, 15 and 10 on other sides; one other doctor in town, kind of competitor you want. Fees the highest: \$1 a mile and obstetric cases \$15 to \$25. Collections 95 per cent. or better. Population German and Scandinavian. Will turn over practice to successor who will buy my residence (\$1,500) and office (\$350) located next door to drug-store. Unusual opportunity for live man. Act at once, and don't answer if you can't buy residence. Reason for selling: Going in with surgeon in city. Address, J. W., care of this office.

Stenographic Work.—Miss B. Clement solicits the stenographic work of physicians who demand high-grade work with all medical terms spelled properly. 513 Pillsbury Bldg. Telephones: N. W. Main 669; T. S. 1887.

Physicians, Attention—Drug stores on easy payments, etc. Drug store positions, United States or Canada. F. V. Kniest, Omaha, Nebr.

Doctor—If you want practical post-graduate work during fine season in the delightful city, write for particulars. New Orleans Polyclinic, P. O. Box 797, Post-Graduate Medical Dept., Tulane University of Louisiana.

DEATHS REPORTED TO THE STATE BOARD OF HEALTH OF MINNESOTA FOR THE MONTH OF SEPTEMBER, 1908

REPORTED FROM STATE INSTITUTIONS FOR MONTH OF SEPTEMBER, 1908

STATE INSTITUTIONS.	Total Deaths													
	Tuberculosis of Lungs	Other Forms of Tuberculosis	Pneumonia	Bronchitis	Diphtheria	Scarlet Fever	Measles	Smallpox	Whooping Cough	Cerebrospinal Meningitis	Typhoid Fever	Diarrheal Diseases of Children	Cancer	Puerperal Septicemia
Fergus Falls, Hospital for Insane.....	14	4	1								1	1	1	
Rochester, Hospital for Insane.....	1													
St. Peter, Hospital for Insane.....	3													
Anoka, Asylum.....	2													
Hastings, Asylum.....	1	1												
Faribault, School for Deaf.....														
Faribault, School for Blind.....														
Faribault, School for Feeble Minded.....														
Owatonna, School for Dependents.....														
Stillwater, State Prison.....														
St. Cloud, State Reformatory.....														
Red Wing, State Training School.....														
Minneapolis, Soldiers' Home.....	4												1	
Totals.....	27	4	1	1							2	1	2	

REPORTED FROM 72 CITIES HAVING A POPULATION OF 1,000 OR UPWARDS
FOR THE MONTH OF SEPTEMBER, 1908

CITIES	Population of U. S. Census of 1900	Population of State Census of 1905	Total Deaths	Tuberculosis of Lungs	Other Forms of Tuberculosis	Pneumonia	Bronchitis	Diphtheria	Scarlet Fever	Measles	Smallpox	Whooping Cough	Cerebrospinal Meningitis	Typhoid Fever	Diarrheal Dis- eases of Child- ren	Cancer	Puerperal Septicemia
Albert Lea.....	4,500	5,657	6	1		2									2		
Anoka.....	3,769	4,053	3												1		
Austin.....	5,474	6,489	5												2		
Barnesville.....	1,326	1,566													1		
Bemidji.....	2,183	3,800	7	5											6		
Blue Earth.....	2,900	3,364	5														
Brainerd.....	7,524	8,137	15			1									1	1	
Chaska.....	2,163	2,085															
Chatfield.....	1,426	1,300	1														
Cloquet.....	1,307	6,117	3												4		
Crookston.....	5,359	6,794	10	2		1									1	1	
Detroit.....	2,060	2,149	4												1	1	
Duluth.....	52,968	64,942	101	5	1	5		8							25	2	
E. Grand Forks.....	2,077	2,487	7	1											2	2	
Ely.....	3,712	4,045	5												2		
Eveleth.....	2,752	5,332	2														
Faribault.....	7,868	8,279	6	2				1							1		
Fairmont.....	3,440	2,955															
Fergus Falls.....	6,072	6,692	10														
Granite Falls.....	1,214	1,340															
Hastings.....	3,811	3,810															
Hutchinson.....	2,495	2,489	1														
Jordan.....	1,270	1,311															
Lake City.....	2,744	2,877	6													1	
Litchfield.....	2,280	2,415															
Little Falls.....	5,774	5,856	6						1						1	1	
Luverne.....	2,223	2,272	4														
Le Sueur.....	1,937	1,842	1													1	
Madison.....	1,336	1,604															
Mankato.....	10,559	10,996	7					1							2	1	2
Marshall.....	2,088	2,243															
Melrose.....	1,768	2,151	2												2		
Minneapolis.....	202,718	261,974	260	26	3	6	1	4				3	4	6	42	22	1
Montgomery.....	979	1,281	1														
Montevideo.....	2,146	2,595	1					1									
Moorhead.....	3,730	4,794	7	3													
Morris.....	1,934	2,003															
New Prague.....	1,228	1,419															
New Ulm.....	5,403	5,720	4													1	
Northfield.....	3,210	3,438	6	2													
Ortonville.....	1,247	1,612	4	1													
Owatonna.....	5,561	5,651	10	1											1	1	1
Pipestone.....	2,536	2,885	1	1													
Red Lake Falls.....	1,885	1,797	1														
Red Wing.....	7,525	8,149	12	2											2	1	
Redwood Falls.....	1,661	1,806															
Renville.....	1,075	1,229															
Rochester.....	6,843	7,233	17	1		1											4
Rushford.....	1,100	1,133	1														
St. Charles.....	1,304	1,238	2														
St. Cloud.....	8,663	9,422	6												1		
St. James.....	2,607	2,320	2	1											2	1	
St. Paul.....	163,632	197,323	178	19	2	9	1	4				4	1		10	9	
St. Peter.....	4,302	4,514	3	1		1											
Sauk Centre.....	2,220	2,463	4			1										2	
Shakopee.....	2,046	2,069	4														
Sleepy Eye.....	2,046	2,312															
So. St. Paul.....	2,322	3,458	1														
Stillwater.....	12,318	12,435	8												1		2
Thief River Falls.....	1,819	3,502															
Tower.....	1,366	1,340															
Tracy.....	1,911	2,015															
Virginia.....	2,962	6,056	17			2										5	
Wabasha.....	2,528	2,619															
Warren.....	1,276	1,640	1														
Waseca.....	3,103	2,838	3														
Waterville.....	1,260	1,383	2											1			
West St. Paul.....	1,830	2,100	3												1		
Willmar.....	3,409	4,040	4											1		1	
Windom.....	1,944	1,884															
Winona.....	19,714	20,334	16	3		2									5	2	
Worthington.....	2,386	2,276	3														

REPORTED FROM 65 VILLAGES HAVING A POPULATION OF 1,000 OR UPWARDS

FOR THE MONTH OF SEPTEMBER, 1908

VILLAGES	Population of U. S. Census of 1900	Population of State Census of 1905	Total Deaths	Tuberculosis of Lungs	Other Forms of Tuberculosis	Pneumonia	Bronchitis	Diphtheria	Scarlet Fever	Measles	Smallpox	Whooping Cough	Cerebrospinal Meningitis	Typhoid Fever	Diarrheal Dis- eases of Children	Cancer	Puerperal Septicemia
Ada.....	1,253	1,515	1													1	
Adrian.....	1,258	1,184															
Aitkin.....	1,719	1,896	1												1		
Akeley.....		1,636															
Alexandria.....	2,681	3,051	4		1												
Appleton.....	1,184	1,321	1														
Belle Plaine.....	1,121	1,301															
Benson.....	1,525	1,766	1		1												
Breckenridge.....	1,282	1,850															
Buffalo.....	1,040	1,124															
Caledonia.....	1,175	1,405															
Canby.....	1,100	1,505															
Cannon Falls.....	1,239	1,460	1														
Cass Lake.....	546	1,062															
Chisholm.....		4,231	12			2									5		
Clason.....	962	1,056															
Delano.....	967	1,023															
Fosston.....	864	1,000	0														
Frazee.....	1,000	1,146	3	1												1	
Glencoe.....	1,780	1,805															
Glenwood.....	1,116	1,718															
Graceville.....	856	1,032	1														
Grand Rapids.....	1,428	2,055	9	1			1	2							1		
Hallock.....	805	1,014	1														
Hibbing.....	2,481	6,566	25			4	5								9		
Jackson.....	1,756	1,776	1														
Janesville.....	1,254	1,205	1														
Kasson.....	1,112	1,049	1														
Kenyon.....	1,202	1,252															
Lake Crystal.....	1,215	1,231	0														
Lanesboro.....	1,102	1,041															
Long Prairie.....	1,385	1,256															
Madelia.....	1,272	1,290															
Milaca.....	1,204	1,319															
Mountain Lake.....	959	1,063	1														
North Mankato.....	939	1,129	2													1	
North St. Paul.....	1,110	1,400	0														
Olivia.....	970	1,019															
Osakis.....	917	1,056															
Park Rapids.....	1,313	1,719															
Pelican Rapids.....	1,033	1,095															
Perham.....	1,182	1,366	2														
Pine City.....	993	1,092	2														
Plainview.....	1,038	1,140	2														
Preston.....	1,278	1,320	1														
Princeton.....	1,319	1,704															
Rush City.....	987	1,041															
Rushford.....	1,062	1,040	1					1									
St. Louis Park.....	1,325	1,491	1														
Sandstone.....	1,189	1,589	3													1	
Sauk Rapids.....	1,391	1,552	2														
Scanlon.....		1,122															
South Stillwater.....	1,422	1,572	1		1												
Springfield.....	1,511	1,546	1													1	
Spring Valley.....	1,770	1,573	2	1												1	
Staples.....	1,504	2,163	3														
Two Harbors.....	3,278	4,402	1			1											
Wadena.....	1,520	1,868	1														
Wells.....	2,017	1,814															
West Minneapolis.....	2,250	2,530															
Wheaton.....	1,132	1,346	1														
White Bear Lake.....	1,288	1,724	1														
Winnebago City.....	1,816	1,553	1														
Winthrop.....	813	1,031															
Zumbrota.....	1,119	1,129															
State Institutions.....			27	4	1	1								2	1	2	
Other parts of State.....	1,012,328	1,085,886	827	46	10	16	1	11	4	1		2	10	11	197	42	4
Total for State.....	1,751,395	1,979,658	1752	126	20	55	9	33	6	1		9	16	44	333	106	5

121 Still births and premature births, not included in above totals

